

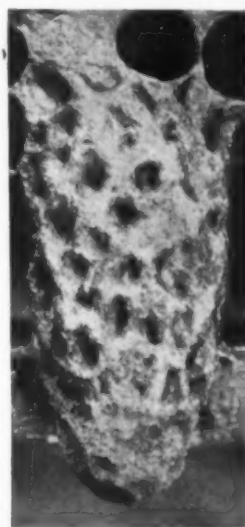
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Methods of Commercial Queen Rearing

By E. C. Bessonnet,
Louisiana.



Equipment

REARING QUEENS commercially is different from raising queens for home use since special equipment is needed for successful and profitable large scale operations. While the technique of commercial queen rearing may be applied to small scale production the methods ordinarily used for small production would be entirely inadequate for the commercial queen breeder.

The beekeeper wishing to produce queens for home use may easily use some of his standard equipment temporarily until he has enough queens for his needs. The commercial breeder on the other hand must have equipment for this purpose only to operate continuously through the season.

Some breeders use a small nucleus with small frames or honey sections; others use standard shallow frames in various sizes of nuclei, with either two, three, or four frames, or with supers divided into two or four compartments. Still others prefer hive bodies divided in two, three, or four; or individual small hives with two to four standard frames.

Usually the kind of queen nucleus is selected because of personal preference or to meet local conditions. The latter plays an important part in de-

ciding the type of nucleus to be used. When nuclei have to be fed continuously because of the lack of natural food sources, it is better to feed as small a force of bees as possible consistent with good queen rearing methods. Then a small nucleus will have to be used so a minimum amount of food will be required to produce a queen.

Under more favorable conditions where feeding is only necessary at intervals, a larger nucleus is recommended since it requires less manipulation and there is less chance that the bees will abscond.

Some feeding equipment is necessary with any kind of nucleus because conditions are never favorable enough at all times to assure uniform success all through the season. Types of feeders are as numerous as types of nuclei and the breeder will have to choose one to suit him.

When sugar syrup is used almost any kind of feeder will do but when honey is fed the problem is more difficult. Unless honey is handled properly and put in jars in a part of the nucleus away from the entrance, it will cause robbing. Sugar syrup, in contrast, may be poured in feeders with little danger of robbing. Most breeders use syrup.

Cell Colonies

In any queen rearing system, large colonies must be used both to start and to finish cells for the nuclei. The conscientious breeder strives to produce large, well developed cells which will produce strong normal queens, able to maintain colonies with a substantial working force at all times.

Under good management, a strong colony will start and feed fifty cells at one time but it will have to rest at least five days before attempting to start another batch. Assuming that 1000 nuclei are being operated and that one colony can start fifty cells every five days, the daily requirement of cells will be approximately one hundred or the production from two colonies as starters.

We now have the finishing colony capacity to determine. With strong colonies, with brood over excluders, twenty cells per colony can be finished to a fine point with continuous feeding. Additional cells should not be given for at least three days after the first lot as overloading the cell finishing colonies will cause them to seal the cells prematurely and the queens will be underfed and small when they emerge.

With a normal production of 7 cells per bar per day per colony, the number of cell finishing colonies for the 1000



Grafting, a highly technical job, even for a commercial queen breeder. (Kruse)



Putting the grafted cells in the starting colony. (Kruse)



The finished cells, ready for the mating nuclei. (Kruse)

nuclei, or the production of 100 finished cells per day, would be approximately forty-five colonies. With ten starting colonies, forty-five finishing colonies, and 1000 nuclei, the outlay for commercial queen rearing will be seen to be enormous.

Operating the Starting Colonies

To operate the starting colonies successfully the queen of each colony has to be found and the bees from half of the combs shaken on combs of honey and pollen. Here is where the cells will be put after grafting. The queen and brood are placed on a separate stand until the cells are removed the next day and transferred to the finishing colonies. Once prepared, the starter colony should be fed and the cells given about two hours after. The bees will then realize their queenlessness and accept the grafted cells.

Experience will show that the best cells are the ones fed profusely for the first twenty-four hours. If cells are neglected in the starter colonies for any reason or improperly fed the result will be smaller finished cells. It is important to have the bees in the right mood to start feeding the cells promptly. This comes with the proper rest of the starting colonies, with sufficient pollen in the combs, good feeders, and a sufficient interval from the time of preparing the colony and giving the cells. These factors are highly essential if good queens are desired.

The Finishing Colonies

The first requisite of the finishing colony is strength. A good, strong force of bees is needed to finish cells

properly. When such a colony is found, four combs of very young brood should be raised to the second story above a queen excluder where the started cells will be finished. A space must be left between the brood for the cell bar. One bar of started cells may be given every three or four days to each finishing colony. A feeder should be kept right over the frames of cells whenever the flow is not sufficient to cause heavy feeding. Since the queen is actually produced in the cell it is very important that the cells be handled and fed with great care.

Handling the Queen Nuclei

Stocking queen nuclei is accomplished in various ways to suit the breeder. The writer prefers to take the nuclei to outyards where bees, brood, and honey are transferred into them in one operation. Bees, brood and honey may also be brought into the queen yard and transferred into the nuclei.

The bees are shaken into cages or into supers with screens, and, after heavy feeding, are scooped out of these containers into the nuclei. When bees and combs must be brought in from outyards, we raise brood and honey over excluders the day before. The following day these supers are removed with the bees in them, screened and brought to the queen yard for transferring.

In each hive body used this way we have three combs of honey, three combs of brood and four with either some honey or entirely empty to hold extra bees. This is fast and satisfactory. Bees brought from outyards and used will not need to be

confined as they are cautious about flying and will not abscond.

After the nuclei are stocked, at least twenty-four hours should elapse before cells are put into them. Feed should be given as soon as possible after stocking and if the feed is actually in the feeders before stocking, the bees will at once busy themselves with the feed and will be satisfied.

After the finished cells are placed in the nuclei they should be closed and not checked for ten days when a laying queen is to be expected. On the eleventh or twelfth day few queens will be found that are not laying unless they have been lost or killed. The queens should be permitted to lay for two or three days, if possible, so the brood thus obtained will maintain the nuclei.

Selecting the Breeding Stock

My method of selecting the breeding stock is complicated because the best is none too good when breeders are desired to meet the highest ideals. After a good honeyflow, every colony which shows high producing characteristics is carefully examined to determine if the bees are gentle and show true markings. This examination includes the drone as well as the worker and the queen as the perpetuation of the strain is highly important.

Colonies showing the most advantageous characteristics are marked after every flow and, at the end of the season, they are brought in for a series of tests before accepting them as breeders. A process of elimination is carried out and those not accepted as breeders are kept around

the queen yard for drone production.

Colonies with potential breeders are the best available. About twenty cells are grafted from each colony now to be tested, the cells placed finally in nuclei and marked according to the number of the colony being tested. If fifty queens are being tested they are given numbers up to fifty and the cell bars numbered accordingly so the progeny of any queen may at once be identified.

First check is to determine size and color. If markings are not uniform, the hive containing the mother is checked to show the defects. If the queens are uniform, the mother colony is marked O.K.

Occasionally the progeny of a queen being tested are small and pointed, showing that the mother will be unsatisfactory as a breeder. Breeding queens must be chosen that produce daughters, that are large, uniform, and well shaped. These are selected for future breeding. Productivity has already been establish-

ed in the yards. Gentleness should also be a characteristic and any colony showing bad behavior should be eliminated.

Some may take exception to my statement about queens producing daughters of unsatisfactory shape. I have had to discontinue grafting from two queens for this reason. The decision was made after repeated tests. The mothers were good producers and large but their progeny failed to inherit these characters.

My ideal is a beautiful large bee, gentle, productive, long of life, resistant to disease, with bees that are good winterers—but I expect to pass to the great beyond still working for this ideal.

Queen breeding fascinates me in a way that makes work pleasant and interesting. There is more truth than poetry in the saying that a "good beekeeper is born and not made" because the intricacies of the business are too great for anyone not interested to be successful.

American Honey Producers' League

Officers for 1935—President, J. W. Newton, Route 2, Baton Rouge, La.; Vice-President, E. T. Cary, Midland Avenue and Tallman Street, Syracuse, N. Y.; Secretary-Treasurer, V. G. Milum, Exp. Zool. Lab., Champaign, Ill. Directors: C. A. Reece, Columbus, Ohio; H. C. Short, Fitzpatrick, Ala.; T. W. Burleson, Waxahachie, Texas; H. D. Rauchfuss, Worland, Wyoming; C. A. Gooderham, Ottawa, Canada.

Individual dues \$1.00 a year; State Association affiliation fees \$12.00 per year.

Individual members are entitled to use the Warning Poster which offers \$25 reward for information leading to the arrest and conviction of any person molesting an apiary of a member in which the poster is displayed. Each poster is \$1.00. Additional posters used on same site 50c each. Subscriptions to any bee journal accepted by the League secretary from members at 50c per year. League law books \$1.00 each.

Through the kindness and generosity of two prominent queen breeders, we will give one queen free after June 1st to each of the first 100 new members in the American Honey Producers' League. Send your \$1.00 now, stating when you want your queen shipped. Include 50c for any bee journal you wish. Send your membership to V. G. Milum, Secretary-Treasurer, Exp. Zool. Lab., Champaign, Illinois.

The League Resolutions at the Georgia meeting extended thanks to

the Georgia Beekeepers' Association and especially to Mr. G. G. Puett of Valdosta and the members of his committee for facilitating the work of the convention. Appreciation was extended to Mayor J. D. Ashley, Valdosta Chamber of Commerce, the Manager of the Daniel Ashley Hotel and to the Valdosta Times for their cooperation. Appreciation was extended by resolution to the Citizens Southern Bank for the use of the Strickland Building for the honey exhibit and the Domestic Science Department of the school for the use of the auditorium and for the preparation of meals served to visiting beekeepers. A vote of appreciation was extended to the Kellogg Company for sending Miss Barber to take part in the program and for their continued helpful cooperation to beekeeping industries. To Harold J. Clay for the market reports, to the Bureau of Entomology at Washington for its continued service with the recommendation that the Secretary of Agriculture use his influence in providing sufficient allotment to the Bureau for the proper conduct of the work. An endorsement that the Federal Government through the Southern States Field Laboratory investigate the cause of losses now sustained by the industry for the shipment of queens and packages, supersedure or otherwise. A recommendation that the Rural Credit Corporation give favorable consideration to loan values on investments in beekeeping. A note of apprecia-

tion to Gov. Talmadge and Hon. E. D. Rivers, of Georgia, for their interest in the meeting. It was also urged that the beekeepers of Georgia request Gov. Talmadge to use his influence to provide funds for properly conducting apiary work and inspection in the state of Georgia.

The Honorary Life Membership Committee recommended Morley Pettit, of Albany, Georgia and of Georgetown, Ontario, as a Honorary Life Member of the American Honey Producers' League. The recommendation was unanimously accepted. [Congratulations, Mr. Pettit!]

To Seek Amendment of Foulbrood Law

Amendment of the state law governing bee inspection will be sought by the Washington State Beekeepers' Association, it was decided at the recent annual meeting.

According to regulations now in force, an inspector who finds colonies infested with foulbrood gives the owner notice to burn them within ten days. He then has to return to see if the order has been obeyed, and if not, has authority to destroy the hives.

Time and expense are involved in this method of control, beekeepers argue. They desire an amendment, which would empower the inspector to burn the affected colonies as soon as he finds them. It is believed that this would help check the spread of the disease.

Advisability of a honey code is being investigated by the group.

It is planned to hold the 1935 meeting in Yakima, some time in December.

I. L. Neill,
Washington.

Bee Sting Injuries to the Eye

We have a report from Vienna, Austria, sent through the kindness of Dr. W. Ehrhardt, Fairbanks, Texas, on four bee sting injuries to the eye. These were published in a journal devoted to the art of medicine. The first one relates the experience of a small child attacked by a swarm of bees, the sting injuring the eye above the middle of the pupil, although the lens was not touched. Dr. Strebel, of Lucerne, reported the case and was able to affect a cure.

The second is of a young man who became blind after a bee sting in the eye. The third of a beekeeper stung on the lid without damage.

According to Dr. Strebel, injuries through bee stings in the region of the eye are dangerous. [Of course, we believe that too.] If the poison reaches the interior chamber, iritis and detachment of the retina may result.

Resistant Stock for Permanent Results

By Charles Mraz,
Apiary Inspector, Vermont.

THERE'S an old saying, "History repeats itself." In that famous history, "Decline and Fall of the Roman Empire," written about one hundred and fifty years ago, the author says: "A cloud of critics, of compliers, of commentators darkened the face of learning and the decline of genius was soon followed by the corruption of taste." How true this sentence sounds, even today.

Some years ago, European foulbrood was threatening the beekeeping industry by killing off thousands of colonies of bees. It spread so quickly and killed off the brood so completely, it was not uncommon for a beekeeper to lose two-thirds of his bees in one season. Everything was done to check this scourge; shaking, disinfecting, burning, but to no avail. Many years before this, in his book, "Beekeeping," (1865) Moses Quinby makes the statement that Italians are strongly resistant to the disease. Then why all the burning, disinfecting, shaking, etc., in trying to conquer the disease in the early 1900's? It must be human to try everything that doesn't work first, in spite of common sense and obvious laws of nature. Today, we still have a little European foulbrood but no one seems to lose any sleep over it.

Today, another scourge seems to threaten bees with extinction, American foulbrood. Everything is being done to exterminate the disease before it does the bees, by burning, shaking, disinfecting, etc. In other words the same thing that was done thirty years ago with European foulbrood is being done now. Most beekeepers, I think, now realize that while such procedure removes the effects of the disease, it can never remove the ever present danger of recurrence. What then about American foulbrood resistance?

Bees have existed on this earth for perhaps millions of years. All their diseases and enemies have undoubtedly existed just as long. If there were not such a thing as American foulbrood resistance, how could the bees have survived through the ages up to the present time with no shaking, no burning, no disinfecting, no one but themselves to depend upon. If bees were resistant to American foulbrood then, why is it killing off so many colonies today?

The bees in this country today apparently are very lacking in American foulbrood resistance. The cause of this may be: Inbreeding, by raising hundreds of queens from only one mother; rapid multiplication of queens and colonies without the checking influence of American foulbrood (the survival of the fittest); the breeding of queens for yellow color and gentleness with unavoidable neglect and disregard to hardiness and resistance to disease. In the past seventy-five years, instead of bees and queens multiplying from the hardest and strongest colonies by natural swarming, it has been done by the artificial process made possible by the movable frame with the consequent bungling of Nature's laws. Nature, however, seems to always have her way and American foulbrood is here to stay until all bees susceptible to American foulbrood are eliminated one way or another. Why then, wait for Nature to do it? Why not eliminate these susceptible bees without waiting for disease to do it?

Bees resistant to American foulbrood are not so scarce as most beekeepers are inclined to believe, nor is there any need whatever of any long drawn-out experimenting to develop such a strain of bees. They already exist waiting to be used. In Europe, where bees have existed for centuries, American foulbrood is practically unknown. For what reason but that they are resistant to the disease?

It must be noted I'm talking about resistant and not immune to American foulbrood. Almost all resistant bees can be made to get American foulbrood by inoculating with a heavy concentration of spores, as for instance by placing a badly diseased comb into the colony. Control of the disease needs only resistance sufficient to the amount of the spores ordinarily carried by bees in honey from diseased colonies. In most cases, honey from a diseased colony does not contain sufficient spores to cause the disease with fairly resistant strains of bees. All the different strains and races of bees vary widely in their resistance to American foulbrood. Some resist the disease far more strongly than others.

The purpose of this article is not to expound a theory, but is based on facts gleaned from personal experience and experiments with American foulbrood resistance. These experiments have proved to me, requeening with American foulbrood resistant stock is the only practical treatment for permanent results, with American foulbrood as well as European foulbrood. You may not agree to this plan now, but you will later.

Suggestions for Hiving Package Bees

By A. G. Pastian,
South Dakota.

The package bee season is here and these notes may be of interest. I have been receiving a few shipments of package bees for eight or ten years. Some came through in first class condition and others not so good.

Eight or ten years ago, shippers usually put much emphasis on feeding. I am convinced that more bees suffered for want of water than from starvation. Several years ago, I called on a beekeeper in the city and during our visit, the express agent called to tell us he had a shipment of package bees but could not locate the beekeeper to whom they were consigned.

We called at the office to see if we could help. We arrived about three in the afternoon and found the bees just inside the door of the express warehouse where they could enjoy the sun!

We moved them out of the sun and sprinkled them with water. The bees all quieted down in a few moments.

Could an express man tell the difference between a cluster starving, and a cluster in distress from lack of water? If I receive bees that are uneasy on arrival, I lay the cages on the side and sprinkle the bees with water or duck them into a boiler of lukewarm water. Then they are allowed to cluster before releasing. This avoids some of the drifting. The bees are more contented and do not rush out of the hive.

Here is my usual way of releasing package bee: (1) Remove the retaining strips. (2) Lay cage on side. (3) Sprinkle with lukewarm water, outside if weather permits, otherwise in a building. (4) Remove feeder can holder. (5) Allow time for bees to cluster. (6) Remove feeder can and queen cage. (7) Cover the opening and look at the queen to make sure she is O.K. and remove the cover from the candy. (8) Place the queen on top of frames in hive in which package is to be installed with combs at one side and space at the other. (9) Dump wet bees into the hive with the entrance of the hive screened and some feed if the weather is cool and no nectar is coming in.

Let Us All Get Together

In all human efforts, there is none so fascinating as that which surrounds the beehive, implying all its wonders. From early history, the products of the bee have been a major factor in sustaining human life. The cow and the bee occupy first rank as friends to man, hence the glamour of the promised land, "which floweth with milk and honey." Fascination for the bee and its activities is universal, since it is found in every clime where man resides. The bee of all creatures, is the outstanding exponent of adaptability and beekeeping is the only agricultural pursuit which yields a harvest with neither planting nor seeding.

As for beekeepers, let us admit that they may be divided into classifications such as Solomon's "sluggards," Dillard's "the words of thou mouth be as the strong wind," Isaah's "my people do not know, neither do they consider," and Paul's "we know what we have believed."

In all sincerity, where do we fit in our beekeeping program? What are you doing to promote and sponsor the progress of your industry? Are you a member of a local or state organization? Are you fully informed of the benefits? Are you a subscriber to the bee journals? Do you stimulate the consumption of honey and boost the industry to better the living conditions of your fellowmen? Seriously, have you imbibed the spirit of cooperation so effectively taught by your bees?

If the answer is in the negative, make application at once for membership in your local and in your state organization. Send for sample copies of each of the bee publications and select those for which you will subscribe. Give your moral and financial support to the American Honey Institute, Madison, Wisconsin. Write them for information so that you will know what it is all about.

The fact that the American people consume less than two and one-half

Go Ye,—and Do Likewise!

HERE is a copy of a proclamation by the Governor of Minnesota setting aside the week of November 11th to 17th as National Honey Week. It was sent in by Dr. Tanquary, Secretary of the Minnesota Beekeepers' Association. Commenting about it he says: "In addition to the proclamation by Governor Olson, Mayor Bainbridge, of Minneapolis, and Mayor Gehan, of St. Paul, also issued proclamations for their respective cities. This is in accordance with the resolution by the Minnesota Beekeepers' Association and we feel that it is a big step forward in Minnesota, getting recognition for the industry."

Well, I should say so. Now why can't other states do the same thing? Here is an exact copy of the proclamation:

pounds of honey each year against 100 pounds of sugar and \$25.00 for booze per capita shows that we do not advertise our product extensively enough. It must be admitted too that the knowledge of the life and habits of the bee and of equipment and methods of manipulation is still in its infancy.

Make your New Year's resolution
"I will." J. A. Schlotthauer,
California.

Our Cover Picture

This month's cover shows by a photograph from life, a worker bee at an open cell. Whether she is depositing the nectar recently brought from the field or helping herself to a supply of food we leave the reader to guess. The picture is much enlarged but shows clearly the position of the bee as she goes about her household affairs.

New Freight Rates on Beeswax

Effective February 1, points east of the Rocky Mountains take lower freight rates on beeswax amounting practically to third class. This rate is known as "rule 72."

Previous to September, 1933, beeswax took first class rate, but at that time was reduced to second class. The new rate means a very satisfactory and low shipping cost for beeswax in less than carload lots.

"Beeswax refuse" takes fourth class rate and consists of old bee combs, cappings or slumgum. It does not, however, apply to rendered beeswax.

PROCLAMATION

WHEREAS, there are in Minnesota more than fifteen thousand persons engaged in beekeeping, who produce from seven to ten million pounds of high grade honey, and

WHEREAS, honey is a cash crop and adds a great deal to the cash income of Minnesota farmers and,

WHEREAS, honey is coming to be recognized for its food and health value and because it may be used in almost every case where sugar is used,

NOW, THEREFORE, I, Floyd B. Olson, Governor of Minnesota, do hereby proclaim

November 11th to 17th
as

NATIONAL HONEY WEEK

in order that the attention of our people may be called to the value of honey as a food. It is strongly urged that the beekeepers of our State receive every cooperation in the observance of this week.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the State to be hereto affixed this 9th day of November, 1934.

FLOYD B. OLSON,
Governor of Minnesota.

(GREAT SEAL)

Attest:

MIKE HOLM,
Secretary of State.

New Officers, S. S. C.

The following officers for the Southern States Conference were elected for 1935: Geo. Bohne, Louisiana, President; G. G. Puett, Georgia, Secretary.

The next meeting place is Nashville, Tennessee, probably in early fall. It is the hope of the Southern Conference that the American Honey Institute and the American Honey Producers' League will meet with the Southern Conference at Nashville as was done this year at Valdosta.



Regulation of Trucks

There is every indication that trucks will soon be subject to the same regulation as railroads in interstate traffic. There are good arguments for removing the irresponsible truck driver from the public highway and also for regulating traffic on the roads.

The big truck is too often a menace to the driver of the family car and some solution of the problem must be found. It should be borne in mind, however, that the truck has served as a defence against unreasonable rates by freight and express. Beekeepers very generally depend upon trucks for moving their product to market.

There are strong influences at work to prevent trucks from the transport of freight at lower rates than charged by railroads for the same service. High freight rates have been one of the important factors in the decline of agricultural prosperity in regions far from markets. When prices are low the cost of moving products to market and of bringing back needed supplies have consumed too large a portion of the total, leaving but little for the producer. Alert leadership is needed just now to make sure that rural interest is served by any regulation of trucks which may be adopted.

Progress or Retrogression?

All of our so-called improvements have not been progress. It is only necessary to compare human relationships in our so-called civilized countries with those of primitive peoples to find the proof. Here in a nation over supplied with all necessities of food, clothing and equipment, there is poverty and suffering on every side because we are unable to distribute the goods properly. Among the savage races such essentials as food are regarded as common property and one individual does not withhold them from another for reasons of personal profit. If there is food enough to supply the needs of all there is no want on the part of any. Here in the midst of our boasted "advanced civilization" one man allows foodstuffs to rot in his warehouse because his neighbor lacks the money with which to pay the price which he would exact.

Although we have made great progress in the production of mechanical equipment and surrounded ourselves with luxury, we have made a mess of our system of distribution which should make it possible for every man to exchange his labor for such things as he may need.

Distribution of Honey Plants

It is interesting to note the wide distribution of some of the best honey plants. From the New Zealand Smallholder, published at Auckland, we learn that white Dutch clover grows freely all over that far country on the other side of the world. White clover is adapted to a wide variety of soils and beekeepers from many lands depend upon it for much of their surplus honey. Strangely enough, however, white clover is reported as yielding but little nectar in some Central European countries. The exact place of its origin will probably never be known, but it is probably somewhere in Europe. It has since been carried over a goodly portion of the temperate regions of the entire world.

Alsike or Swedish clover is likewise mentioned as an important source of honey in New Zealand, as it is in many other countries. Alsike was brought to England in 1834 and to America in 1839. In this country it was widely distributed by enthusiastic beekeepers who recommended it to neighboring farmers as a forage crop.

In reading the list of honey plants from any country one is likely to find somewhere in the list a plant which is familiar as a source of honey in his own home neighborhood.

Milk and Honey

In ancient times milk and honey were recognized as foods of prime importance to the human race. In ancient Hebrew literature the promised land was spoken of as "flowing with milk and honey." In later times so many new foods have appeared from time to time that there has been a tendency to lose sight of the importance of the two which the human race so long regarded as fundamental.

The historic background adds much to the interest of the experimental work in progress looking for a suitable combination of the old time favorites. Several references have appeared in these columns to Tracy's honey and cream experiments at the Illinois Experiment Station. Likewise at Iowa State College at Ames, Prof. C. A. Iverson has developed a confection by combining condensed milk and honey.

The result is a food which would seem to be ideal for soldiers or explorers in the field or for others who are in need of food which is light in weight and which has great energy producing value. Iverson's confection contains approximately half milk solids and half honey solids. In the pure state it more nearly resembles a sweet cheese than anything which the writer can think of. It is very palatable and some are very enthusiastic regarding it.

The fact that two and one-half quarts of raw milk are necessary to produce a pound of the product will of necessity make it somewhat expensive. We feel that Prof. Iverson should receive every encouragement to continue his experiments. If manufacturing and sales problems can be overcome the new confection may prove an important outlet for the beekeeping industry.

It seems strange that a product combining milk and honey has not been sought long ere this.

Increased Honey Production

If we examine the figures as to amount of honey going through the larger city markets we are impressed with the idea that there has been a great increase in the volume of honey produced in recent years. There is some question as to the accuracy of this conclusion, however.

It is recorded that about 1870 Moses Quinby requested Solan Robinson, then editor of the agricultural department of the New York Tribune, to ascertain the amount of honey sold by all dealers in New York that year. The report was that the aggregate of northern honey was 211,000 pounds with nearly as much more from the South and the West Indies. The canal boats from Little Falls, carried to the New York market a total of 80,000 pounds for the year, of which Moses Quinby and his son-in-law L. C. Root produced 25,000 pounds.

With the total receipts of the entire New York market considerably below a half million pounds for the year, one gets the idea that honey was of little importance at that time. Individual beekeepers with their extensive outfits have recently produced more than half that much honey in a single season.

The truth of the matter, however, appears to be that the greater part of the honey produced in the seventies never entered the channels of wholesale trade. It was

mostly produced on the farms in small apiaries and consumed in the immediate neighborhood. In those days nearly every farm had a few bees along with the cows and hens. Since so many of these small apiaries have disappeared during the period of development of the large beekeeping outfits, there is a serious question as to whether we really produce any greater volume of honey now than in the old days.

Overstocking

One of the most puzzling problems of the beekeeper is the carrying capacity of a given territory. Langstroth, it will be remembered stated that it would be hard to overstock a GOOD beekeeping territory. A poor one is very easily overcrowded.

In the palmy days of California, McIntyre with 600 colonies in one yard secured an average of 170 pounds per hive. It is hardly probable that his crop would have been much larger had the apiary been divided into two or three parts in different locations.

One thing appears certain and that is that nectar which is not gathered at once is evaporated and thus lost. If the honey crop is not harvested today it will not be left for tomorrow's gathering.

Neither can there be any question but that the available nectar in a given area varies greatly from day to day and from season to season, depending upon weather and other environmental factors.

The Magazines of Old

In view of the difficulties of maintaining circulation for the few bee magazines now in the field, one cannot but wonder at the apparent popularity of beekeeping literature in the not distant past. In 1891 the following bee magazines were published: Canadian Bee Journal, White Mountain Apiarist, Missouri Beekeeper, Beekeepers' Review, California Beekeeper, American Bee Journal, Gleanings in Bee Culture, American Apiculturist, Bee World, Busy Bee and perhaps others. Of these, only Canadian Bee Journal, American Bee Journal and Gleanings still survive. The Bee World above mentioned was not the English magazine of that name but was published in our own state of Pennsylvania.

One wonders whether people no longer take the same interest in their bees or whether such modern entertainment as radio and moving pictures has displaced the habit of serious reading.

Living at Home

In Japan it is said to be a common axiom that "what the farmer needs he should produce." As long as American farmers followed that rule agriculture offered the most independent and secure occupation known, even though the standard of living was lower than it has since become. When farmers adopted the plan of specialization they lost their independence and became dependent upon conditions beyond their control.

Here and there we find a small farmer who still lives by the old ways and they rarely have much complaint to offer even in a time like the recent severe depression. A considerable number of our readers belong to this class. They follow beekeeping along with such lines as poultry, gardening, dairy, etc. So much of their living is produced at home that they are able to get along with greatly reduced cash income without serious inconvenience.

A Remarkable Growth

Probably in all of the history of commercial honey production there is no other showing equal to that made in Manitoba in the past fifteen years. The official figures for the year 1934 show a total production of 4,617,264 pounds of honey produced in the province. The average production per colony for all bees reporting was 112 pounds which appears very high to those familiar only

with production in the average locality outside the sweet clover region.

The Canadian beekeeper was favored in price also; for extracted honey the average price received was 8½ cents per pound and for comb honey 15 cents per pound.

When the writer of this, first visited Manitoba less than fifteen years ago, beekeeping was just beginning to attract attention. The present Provincial Apiarist, L. T. Floyd, had but recently arrived and taken up his new work. Nobody knew how many beekeepers there were in Manitoba nor where they might live. Floyd was enthusiastic and made the most of his opportunity to persuade his fellow citizens that Manitoba was a promising place for beekeeping. His prophecies have all been realized and the result is beyond his fondest expectations.

The prosperity of the beekeepers of western Canada is reflected in the business of our own shippers of live bees from the South. In view of the results achieved it is not surprising that about \$75,000.00 worth of live bees in packages were shipped into Manitoba alone last season. There is every reason to expect that within a short time reports from Saskatchewan and Alberta will approximate those from Manitoba.

More Rain Needed

While the reports from some localities concerning the breaking of drouth are reassuring, it appears that there are still many places where the moisture supply is deficient. In fact the word coming from official sources is to the effect that unless greatly increased moisture becomes available during the spring months, there are large areas where the situation will be acute and where food shortage is likely to be serious. Thus it appears that those living in localities where good rains have fallen are very fortunate. The experience of the recent past should teach us as a nation to formulate some policy of water conservation. Instead of draining every bit of marsh and straightening every small stream we should be extending the natural water reservoirs to provide for times of scarcity which are bound to recur with unpleasant regularity.

Another Sweet Clover

In view of the great success of the two sweet clovers in common use, it might be well to try some of the others which are to be found in Europe and Asia. The Balsam clover or blue melilot, (*Melilotus caeruleus*) is a blue flowered variety grown as a forage crop in Switzerland. This is reported as a good honey plant like the white and yellow flowered varieties with which we are already familiar.

Clethra As an Ornamental

The White Alder (*Clethra alnifolia*), is an important source of honey in many eastern localities where it is commonly called "sweet pepper bush." In the old days nurserymen advertised it for sale in the bee magazines. The honey is light in color and of fine flavor and the dependence of its bloom makes it valuable to the beekeeper. It would be well if interest could be revived in pushing it for ornamental planting.

Supersedure

Doctor Miller once stated that there is a much greater percentage of supersedure in a good year than in a poor one. This is a very logical conclusion since the rate of brood rearing would be expected to be heavier in a good season.

Likewise it is much easier to requeen in a good season. When the bees are in a fever of excitement with the gathering of a crop but few queens are likely to be lost in requeening. When there is nothing coming from the field and the bees are idle it is difficult to secure acceptance of new queens.

Supersedure in Package Bees

By G. G. Puett,

Georgia.

THERE HAS BEEN much said about supersedure of queens received by northern honey producers from the southern shippers. Some think that the shipper is at fault; some think the transportation agency is responsible; and at least a portion of the southern shippers think that the receiver is to blame.

No doubt some of the blame is to be found in conditions brought about mutually by the shipper, the transporter and the receiver. However, to my mind the chief cause of supersedure is still untouched.

To get at the trouble from the right angle, let us follow a package from the time it is properly installed in the hive. We shall take for example the ordinary two-pound combless package of bees. In this package, there are approximately ten thousand bees from a few days old to old bees with, let us say, an average of three weeks. Under ordinary conditions the queen should begin to lay in two days. It is the writer's opinion, however, that it is about four days before the package is really organized. Bear in mind the bees are getting older all the time. Taking this schedule, it will be twenty-three to twenty-five days before any considerable number of bees begin to emerge.

Since the average age in the beginning was three weeks and since it is absolutely necessary that this age be stepped up to six weeks before the emergence of new bees, it is quite natural to suppose that in the meantime quite a number of the original bees have died. **In this lies the chief cause of supersedure.**

The cluster has been decreased to such an extent that the bees raise the question "Why are our numbers getting less? Is the queen failing?" They come to the conclusion that it is the fault of the queen and to eliminate the possibility of extinction, they prepare to produce a new one.

We must then propose a way to eliminate the trouble. In my opinion, it can be removed in two ways; First, if the packages are bought for winter loss and are to be introduced in apiaries already established, the cause of supersedure may be eliminated by the introduction of emerging brood in about ten days or two weeks from the time the package is installed. Second, if the packages are to be used for new apiaries or where the possibility of foulbrood is too great, then the receiver should buy an additional pound of queenless bees to

be introduced to the original package in about ten days or two weeks, from the time of installation.

As I see it, the sole necessity is to eliminate the natural shrinkage of the cluster, thus removing the restriction of egg laying on the part of the queen. If this is done, then the production from package bees, based on per colony average, will be much higher than it would otherwise be.

Meeting of Directors of Honey Institute

The Board of Directors of the American Honey Institute met at Hotel Daniel Ashley, Valdosta, Georgia, Tuesday, December 18th. The following Directors were present:

Those elected for three years—D. D. Stover, Mississippi; Geo. Lotz, Wisconsin. Those elected for two years—T. W. Burleson, Texas; E. R. Root, Ohio. Those elected for one year—M. S. Stone, Utah; E. G. Brown, Iowa.

R. H. Kelty was elected temporary Chairman and the Directors elected the following additional Directors to serve one year: G. C. Lewis, Wisconsin; H. M. Krebs, California; L. C. Dadant, Illinois.

The following officers were elected for the ensuing year: R. H. Kelty, President; Mrs. M. F. Jensen, Secretary-Treasurer; G. C. Lewis, Chairman Board of Directors; D. D. Stover, Vice Chairman, Board of Directors; L. C. Dadant, Secretary of Board of Directors; H. F. Wilson, Chairman of Finance Committee; Lewis W. Parks, Chairman Advisory Committee; Geo. C. Lewis, H. F. Wilson, R. H. Kelty—Executive Committee.

The Executive Committee were given power to choose the other member of the Advisory Committee with the assistance of Mrs. Jensen and Mr. Parks.

H. F. Wilson presented a budget for 1935, 1936, 1937 and 1938. A resolution was passed to adopt the budget for 1935.

Prof. Wilson also submitted a plan for a permanent foundation. A \$20 contribution had been received by one member and in order to start a fund, Prof. Wilson was given instructions to take an additional \$80 from the general fund to make up \$100.

The Executive Committee were in-

structed to take steps in securing bond for the handling of finances of the Institute.

Prof. Wilson also submitted a plan for securing funds for the Institute based on a quota for each state according to the average honey production for the years 1929 to 1932 inclusive. His plan was accepted by the Board of Directors. With nothing further, the meeting adjourned until 7 P. M. Wednesday, December 19th.

The American Honey Institute Board of Directors met at Hotel Daniel Ashley, Valdosta, Georgia on Wednesday, December 19th at 7 o'clock, all Directors being present with the exception of Mr. Krebs and Mr. Lewis. There were also present Mrs. Jensen, Miss Cranston and Mr. Kelty.

Mrs. Jensen gave a report of the difficulties which she thought were to be encountered for the coming year, the main difficulty being that of finances. It was proposed that Mr. Wilson and the Executive Committee take such steps as they might deem necessary to solicit funds from educators, inspectors and other officers who receive their salaries in whole or in part from the beekeeping industry.

The matter of help for routine work in the office was also discussed and it was thought that the one-half time clerk additional as proposed by the budget would be of help but probably would not be sufficient to take care of the necessary routine work.

There was also a discussion in regard to a proposed trip for Mrs. Jensen through the western states, the expense being shared in part by those states which she would visit. This visit to be purely promotional work for the Institute among beekeepers. The Board of Directors recommended that the Finance Committee give this attention and make plans for such a trip.

The matter of other trips for Mrs. Jensen was discussed but left in the hands of the Executive Committee for final decision and action.

The need for additional funds for publishing and for circularization of materials, was brought to the attention of the Board of Directors. Although no motion was made, it was the sentiment of the Directors that with the budget allowed, the Executive Committee would have the authority to sanction any additional activities they might deem wise. With nothing further, the meeting adjourned.

Secretary of Board of Directors.

The Evolution of Beekeeping Practice, Part II

From June, 1920.

By George S. Demuth.

This is the second part of Mr. Demuth's discussion of beekeeping practice, the first having appeared in our January number. Interested readers would do well to go over the first part again. We hope to have this historical material continuing through the Anniversary Year.

IN DECEMBER, 1885, at the Detroit convention, Mr. Heddon announced the new Heddon hive and his book, "Success in Bee Culture." The new Heddon hive was designed especially to meet the requirements of the contraction system. The length and width remained the same as the eight-frame Langstroth hive, but the depth of the frames was reduced to 5 3/8 inches in order to make eight of these shallow combs equivalent in capacity to five Langstroth frames. It was advised that two of these shallow brood-chambers be used during the six weeks preceding the honey-flow for the strongest colonies, but at other times the brood-chamber was contracted simply by removing one of them. Colonies not strong enough for two sections of the brood-chamber during the building-up period were to be left on the one.

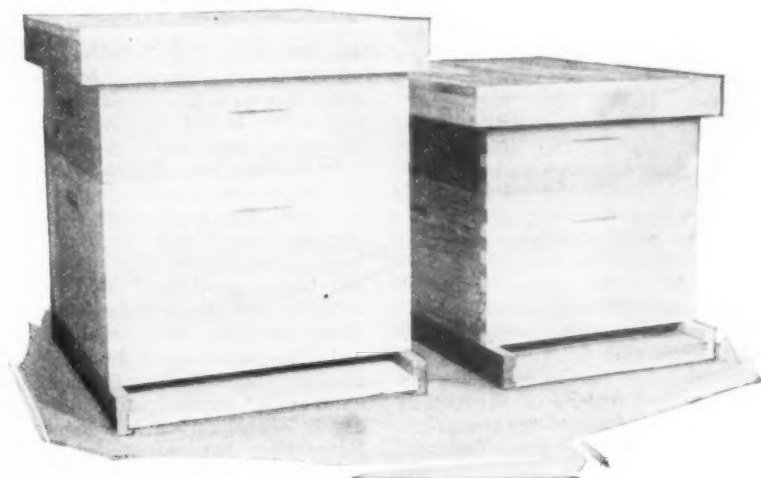
Thus was accomplished the second step in the reduction of the size of the brood-chamber since the days of Langstroth and Quinby. The con-

tractionists were using a hive much smaller than that of which Quinby wrote, as quoted above: "Very satisfactory for the first summer, but in a year or two your little hive is gone."

Mr. Hutchinson was so enthusiastic in regard to these new ideas in comb honey production and so apt as a teacher that he rapidly came to the front as a leader. He began the publication of "The Beekeepers' Review" in 1888, and the pages of the early volumes of this journal are replete with the new comb honey methods. At that time each issue of "The Beekeepers' Review" was devoted to a special topic in beekeeping. The December, 1891, issue was devoted to the subject, "What Shall We Do If Poor Seasons Continue?" As was his practice, the editor wrote a "leader" for the preceding issue, part of which I quote: "In 1888 the average yield in my apiary was 10 pounds per colony. In 1889 it was 20 pounds, in 1890 not one pound, in 1891 5

pounds. * * * The honey stored in my apiary the past four years would not have kept us in food more than one year. I am forced to believe that hundreds of beekeepers could make a similar report." After some remarks about some changes in his location which had been brought about by better agriculture, he continued: "What puzzles me is that we had good crops for ten years, then poor crops for four years. It seems as though the change ought to have been more gradual."—(The Beekeepers' Review, Vol. 4, pp. 298-299). Ten years later Mr. Heddon told me, in person, in his own apiary, that he had given up all hope of securing another crop of honey in Michigan, since there had been a series of poor seasons in his locality the past fifteen years.

Among the contributed articles on the remedy for poor seasons was one by R. L. Taylor, the closing paragraph of which follows: "I will close with the suggestion of one other possible remedy. In my home apiary the past season I had one swarm for about every twenty-five colonies, an average of about 5 pounds of comb honey to the colony. But there was one colony that cast a swarm and gave a surplus of 75 pounds of comb honey over and above sufficient winter stores for the two colonies. * * * There was no accession of bees from other colonies nor any robbing. Wherein was the power of this colony? Was it from the fortuitous conjunction of conditions at the most favorable times so as to produce extraordinary exertion at the nick of time? Did it possess a secret knowledge of some rich acre of clover in a sunny nook? Or was it possessed of inbred characteristics which gave it power to excel? If in the first or last, as seems most likely, we have in them a rich field for explanation. He who finds out how to time the conjunction of conditions and to perpetuate the most desirable character-



These two hives represent two modern schools of beekeeping; one favors a large brood nest in which the queen and colony will be contented, like that represented by the Modified Dadant hive at the left; the other favors a small hive like the ten-frame Langstroth and the use of two stories for brood and a food chamber for winter, as at the right in the picture.

istics will abolish poor seasons, not simply find a doubtful remedy therefor."—(Beekeepers' Review, Vol. 4, p. 323). Taylor here uttered a prophecy well worth a most careful study by any beekeeper, and which in the light of our present knowledge helps to explain the series of poor seasons in the clover region and the decline in beekeeping in that splendid honey producing area.

I do not mean to infer that a reduction in the size of the brood-chambers was the sole cause of the poor crops secured at this time, but the reduction of the size of the hives certainly rendered the maintenance of the colonies in a prosperous condition much more difficult, especially during adverse seasons. The reduction of basswood and the growing importance of alsike clover made it necessary to have the colonies strong much earlier than was previously necessary when the colonies built up on white clover and secured a crop of surplus honey from basswood. That the failures were not so much the fault of the seasons as that of management is suggested by Mr. Taylor the very next year, 1892, as follows: "In the leanest of the late lean years every colony that cast a swarm as soon as the first opening of the white clover has given me more than an average amount of surplus comb honey, and by that I mean more than an average in good seasons. For it has come to be a fond dream of mine that all reasonably good colonies having good queens can be brought to the swarming point by that time."—(The Beekeepers' Review, Vol. 5, p. 267). Here Taylor sees the possibilities of a "conjunction of conditions" designed by the beekeeper instead of the former "fortuitous conjunction of conditions."

Fortunately, the experiment in the repeated reduction in the size of the brood chamber was not conducted without a check. Some beekeepers produced extracted honey throughout the comb honey era, retaining the original brood-chamber capacity. The most prominent among the defenders of the large hive was Charles Dadant. In the early days of the movable comb hive he had adopted the Quinby hanging frame, but instead of using eight frames, as advised by Quinby, he built his hives to hold eleven frames. In 1874 he wrote: "For six or seven years I have tested the laying ability of my Italian queens. For this purpose all my hives destined to produce honey have been made with a capacity for eleven Quinby frames, or if American, sixteen. * * * By the first of June three of my Quinby hives had between seventy and seventy-five thousand cells containing brood, while the best of my Americans had about ten thousand cells of brood less. Yet both kinds had equally young and prolific

queens, the same pasture and the same care."—(Gleanings in Bee Culture, Vol. 2, p. 29). This amount of brood, as combs are ordinarily filled, would be twelve to fifteen Langstroth frames.

The Dadants, being producers of extracted honey, have continued the use of this hive. They fought consistently against the reduction in the size of the brood-chamber, which was brought about during the comb honey era. From 1885 to 1899 the discussion of large vs. small hives continued, in which Charles Dadant and C. P. Dadant defended the large hives in opposition to the comb honey producers. In 1895 A. N. Draper proposed a modification of the Dadant-Quinby hive, which is now known as the Jumbo hive. About this time E. R. Root was advocating the use of the two-story, eight-frame hive, since the eight-frame was then standard. As a result of all this discussion there began a tendency toward increasing the size of the brood chamber.

During the comb honey era many improvements were made in hives and frames, practically all of which were comb honey requirements. The thick top bars, self-spacing devices, as well as many other improvements, were designed especially for the comb honey hive. Furthermore, a standardization of hives and frames used in this country was practically accomplished during this era.

The Second Extracted Honey Era

The Federal Pure Food Law was passed June 30, 1906, ushering in a new era in beekeeping. We are now in the early morning of the second era of extracted honey production which promises to be the brightest of the eras in American beekeeping. It is no longer necessary to sell with the honey the combs in which it was stored in order to convince the consumer of its purity, since, under the Federal pure food law and the pure food laws of the various States, this is now done by means of a label. Extracted honey production has increased by leaps and bounds since the passage of this law.

The new era of extracted honey production began after the beehive had been standardized and we have plunged into the midst of extracted honey production, using a hive designed for comb honey production. In closing it may be well to mention at least one of the difficulties involved in using a comb honey hive for extracted honey production. The ten-frame Langstroth brood chamber is now admitted to be too small for the complete development of the colony previous to the honeyflow; therefore, two brood chambers must be used for brood rearing at this time. If the second brood chamber is given on top the queen usually goes into it, but often fails to go down again, thus abandoning the lower brood

chamber, the combs of which are partially filled with pollen as the brood emerges. When the second story is filled with brood and honey the queen may go into the next super above, abandoning both the first and second stories. In other words, no matter how many hive bodies are used, the queen is often partially confined to but one of them at a time, with a tendency to go upward into the supers, abandoning in turn each brood chamber, if the queen excluder is not used. If in building up previous to the honeyflow a second hive body is placed below, the queen often fails to go down, and she may become sufficiently crowded for further brood rearing room that a tendency to swarm is developed in the colony before the queen finds the combs below.

With the horizontal wiring of the frames it is difficult to overcome the stretching of the cells just below the top bar of the frame unless all of these cells are used for brood rearing the first year, thus reinforcing the wax cells by means of the cocoons. When there is one or two inches of comb adjacent to the top bar that is unfit for brood rearing on account of misshapen cells, we are asking too much of the queen if we expect her to pass freely both up and down, past spaces and sticks and finally across the imperfect comb to find cells in which to deposit eggs.

This trouble may be overcome to a large extent by carefully sorting the combs, using in the brood chamber only those which are strengthened by cocoons to the top bar. Inverting the frames, the first year they are used, results in a reinforcement of the upper portion of the comb if brood is reared in them to the top bar, which is at the bottom when the frame is inverted. Some better method of wiring the frames may be developed by which sagging of combs may be overcome. Dr. Miller supports the foundation in his frames by means of wooden splints to overcome the tendency of the combs to sag. He also secures combs built down to the bottom bar by using wider foundation, which extends down between the two halves of a split bottom bar. He thus eliminates the barrier formed by the usual space between the comb and the bottom bar of the frame as well as the barrier formed by misshapen cells in the upper portion of the comb. He reports that his queens pass readily from one hive body to another.

If the same sized frame is to be used for both the brood chamber and extracting supers, the Langstroth depth is probably a fair compromise. Extracting combs, deeper than the Langstroth would be objectionable in supering and in extracting, and brood combs shallower than the Langstroth would be objectionable from the standpoint of brood rearing. Unless

something can be done to overcome the tendency of combs to sag, as they usually do with horizontal wiring, beekeepers may again return to the deeper frame for the brood chamber and use a brood chamber large enough that a single story is suffi-

cient, since in such hives the barrier formed by misshapen cells in the upper portion of the comb does not limit the activity of the queen, but may be utilized to the advantage of the beekeeper as an obstruction to check the tendency of the queen to enter the supers.

trol, inspection should be preceded by education.

There were 319 boys and girls in bee clubs in 1934 in Pennsylvania with a total of 442 colonies and an average of 94 pounds per colony or a total production of 41,548 pounds when the state average production per colony was only 26 pounds. The older folks profit by the examples of these boys and girls so the club members become leaders.

Valdosta Highlights

Sorry not to have ended this in February but the room was all too short. This ends the resume of good items from the Valdosta speeches.

"The New Era in Beekeeping," E. R. Root, President A. I. Root Company, Medina, Ohio.—**"When the doctors and hospitals recognize the value of honey, people really will begin to eat it."**

The success of this meeting depends largely on the efforts of Mr. Puett. (We say so, too. Our hats off to you, Mr. Puett. It was a great job!)

The new era in beekeeping will bring about the cleanup of American foulbrood, the extension of new honey plants like sweet clover in the North and vetch in the South. The American Honey Institute is at the head of the expanding market.

— o —
"Greetings from Canada," C. B. Gooderham, Dominion Apiarist, Ottawa.—In Canada we have something new in beekeeping in the three prairie provinces with a production now over 10,000,000 pounds. Our act and regulations for a grade for export markets worked well both for export and provincial shipments of honey; grading by color, class and quality. **In Canada, our honey must be granulated.** Our regulations also include plant inspection for sanitation (often needed). Export honey must be graded and government inspected and dealers must be registered with the Department of Agriculture. Standardization of containers will come soon.

It is important to note as far as Canada is concerned, that as the price of packages rises, the killing of bees for package replacement becomes less. Many now winter outside in places as far north as Beaver Lodge. Many queens shipped into Canada from the South are of inferior quality and unsatisfactory. The flat rate now proposed will increase wintering in Canada. From our point of view in Canada, we suggest that superseding in package bees may also be due to the quality of the queens included.

— o —
"The Effect of Drouth on Colony Development," Dr. M. C. Tanquary, St. Paul.—Charts and figures show

retarded colony development and interference with proper honey producing strength due to drouth in Minnesota. From September, 1933, to September, 1934, we had no normal rainfall. May of this year was hot and dry with dust storms. Strong colonies, with brood averaging three frames on May 1st and five on May 15th, lost to 4½ on June 15th when the brood rearing should have continued up. June rains increased the average to seven frames. A pollen dearth caused the trouble.

Three-pound packages hived on combs, April 2nd without pollen and sugar fed showed the same condition. With pollen available in the field brood began normally but then dropped and these packages showed the same history as over-wintered colonies, with a loss of brood.

Packages sugar fed and provided with pollen substitutes showed a constant brood climb and normal conditions.

— o —
"Disease Eradication," C. A. Reece, Inspector, Ohio.—From our point of view, burning for disease is a wise measure to save a worse mess. In Ohio from a 16% state wide A.F.B. infection, we have reduced the amount in a three-year period to a negligible figure. **The inspectors clean up as they go. Kill with cyanogas, burn and cover. The equipment is cleaned for the beekeeper. It works.**

There are 30,000 beekeepers in Ohio; 1200 amateurs, 150 professionals and the remaining indifferent ones cause the difficulties with disease.

Package bee installation is a good key to the presence of foulbrood in the neighborhood. If there is any within a three mile limit, the package bees will be sure to have it.

— o —
"Developing an Extension Program," Edw. J. Anderson, Pennsylvania.—Demonstration apiary, club work, foulbrood control, marketing and pollination are suggested in the extension program. In foulbrood con-

— o —
"Comparison of Wintered Colonies and Package Bees," C. H. Gilbert, Wyoming.—Bees delivered May 15. Expenses of packages, including express, figured against winter loss, a 50-pound store consumption, and cellar packing, based on 207 colonies in cost accounts, showed the first year, 2-pound packages averaged 138 pounds; 3-pound packages 134 pounds; overwintered colonies 257 pounds. The third year, 2-pound packages 224 pounds; 3-pound packages, 235 pounds, overwintered colonies 150 pounds. It looks as though when the fact is considered that 50 pounds of the production of the overwintered colony is necessary for winter stores, that the package for Wyoming conditions is sometimes ahead and usually equal to the overwintered colony.

List of Ala. Pledges to American Honey Inst.

Jasper Knight, Hayneville, \$25.00; W. E. Harrell, Hayneville, \$25.00; M. C. Berry, Montgomery, \$25.00; J. M. Cutts & Sons, Montgomery, \$20.00; W. J. Forehand & Sons, Ft. Deposit, \$15.00; Holder's Apiaries, Citronelle, \$15.00; Bolling Bee Co., Bolling, \$12.50; David Running, Sumterville, \$10.00; Citronelle Bee Co., Citronelle, \$10.00; H. C. Short, Fitzpatrick, \$10.00; Taylor's Apiaries, Luverne, \$10.00; Caucasian Apiaries, Brooklyn, \$10.00; P. M. Williams, Castleberry, \$10.00; Alabama Apiaries, Mt. Pleasant, \$10.00; N. B. Smith, Calhoun, \$7.50; Crenshaw County Apiaries, Rutledge, \$5.00; J. F. McVay, Jackson, \$5.00; Lewis & Tillery Bee Co., Greenville, \$3.00; Tillery Brothers, Greenville, \$3.00; Total, \$231.00.

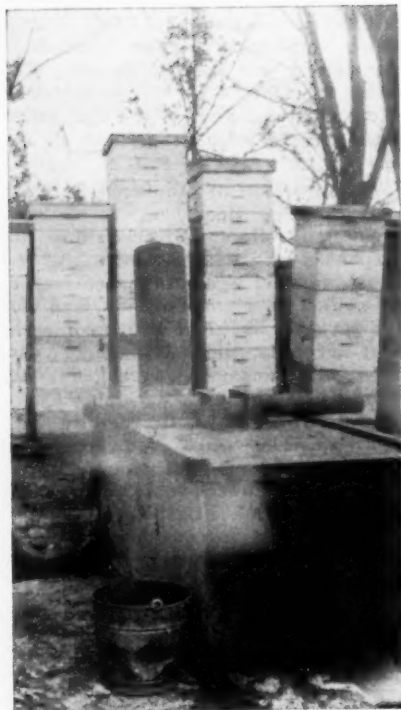
Bakers' Radio Honey

On the American Bakers' radio program featuring Joe Penner, on December 20, a feature was made for the first week in January of "Honey Topped Coffee Cake."

Such boasting as this is certain to redound to the benefit of honey producers and make a permanent place for their product. Again this sort of thing points to some of the good work of the American Honey Institute.

Many Uses for Beach Wax Tank

By Walter H. Hull,
Virginia.



**The Beach Wax Melting Tank
—Open Air Installation**

The Beach wax melting tank, open-air installation, in operation. A pit in the ground for a fire-box, another hole, shown at the left, for a five-gallon can to catch the wax and honey.

The wooden cover warped in spite of being painted several times with hot linseed oil. It is not as tight as it should be, even with the weight on it, as shown by the jets of escaping steam.

THE WAX MELTING TANK and furnace described by Frank Beach in the June, 1933, *American Bee Journal* is proving a most useful device here. Following the example of Cale and Kirlin, I installed the tank out-of-doors, with a hole under it for a fire box and another hole at the side for a 5-gallon can under the spout. I would rather have it under cover and screened from bees, but where no building is available this outdoor installation is perfectly practical.

The specific use for which Mr. Beach recommends this tank is for rendering old combs. I find that nearly every beekeeper has some policy in regard to old combs, ranging all the way from using a good wax press on them to letting the moths eat them up. J. L. Winebarger, one of Virginia's leading beekeepers, expressed the general sentiment of all beekeepers in regard to old combs at the summer meeting of the Virginia Association at his home last August. He was demonstrating his method of rendering wax, using cappings, (washed, so the bees would not bother). Someone asked him if the plan, which was similar in principle to the one used in the Beach tank, would work equally well for old combs.

"In rendering old combs," said Mr. Winebarger, "you're pretty likely to have trouble whatever method you use."

In using the Beach tank hive bodies full of combs are simply put into the tank, which has a couple of inches of water in the bottom, and a fire kept going under it for about half an hour. While this probably does not get all the wax from old combs it is certainly more efficient than letting the moths eat them. It is more efficient and practical than putting them into a solar wax extractor, which is too slow a method for any number of combs. It is better than punching a sackful of them with a stick in a tub of hot water. It is in fact more efficient than any method I have seen except the regular wax press. And while the wax press gets more of the wax the melting tank has certain advantages that compensate for the wax lost.

The point brought out by Beach in his original description of this

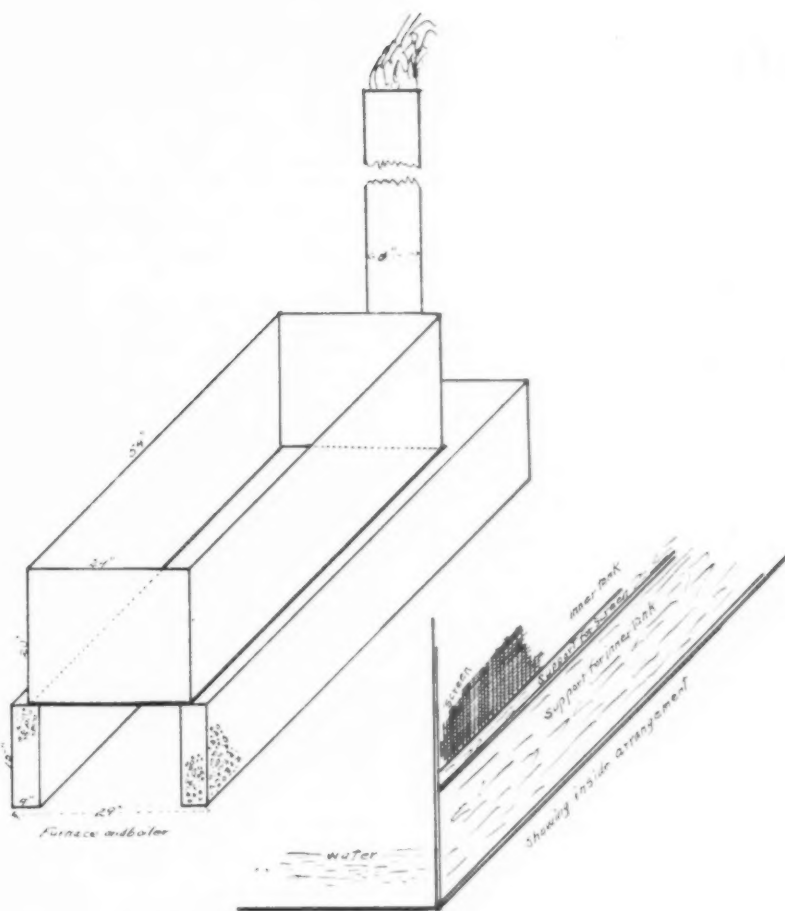
tank and furnace was that it could be operated by one man. It seems doubtful indeed that the difference in the amount of wax recovered would pay for the extra labor and time required for operating a press, except under the most favorable conditions.

Another point in favor of the tank is that it can be operated in cold weather. Wax rendering with a press, as explained in directions for using presses, must be done in hot weather or else in a hot room. Now cool weather, the off season, is the logical time for rendering wax. And as for a warm room, the only warm room available to thousands of beekeepers is the family kitchen. In a choice between using a wax press in the family kitchen and using a Beach melting tank out-of-doors, my vote would be for the tank method every time. I helped a neighbor do some extracting in his kitchen once. Well, wax is just $5\frac{1}{2}$ times as hard to clean up as honey is.

For melting cappings this tank is as good or better than any other method I have seen. Whether you uncap over a box or tub with perforated bottom, or over a wire basket, all you have to do after letting the cappings drain for a day or two is to set these containers into the melting tank and build a fire under it. Within half an hour the containers will be entirely empty while the honey and wax from them will be where it belongs, in the can under the spout.

Still another important service that the Beach tank performs perfectly is cleaning chunk honey frames. This method of producing honey is growing in favor. It is especially suited to small apiaries. But as any one knows who has tried it, frames from which the comb has just been cut are amazingly messy things. Not only do they drip honey from all four sides; frequently the comb is built down over the bottom bar so that the two edges of this bar as well as the upper side must be scraped to get it clean.

And it isn't clean then. Scraping these frames while wet with honey is the stickiest, messiest job that I have ever seen. It is quite impractical. Yet if the combs are stacked up to drain the honey drips down through the whole pile, making things worse rather than better. The supers



This is the diagram of the Beach Wax Tank that appeared in June, 1933. By reading Mr. Hull's article and studying the diagram and the picture, the details become evident. The inner tank which fits into the outside tank shown resting on the furnace sides, is with screen above the bottom so the containers with combs can clear the floor of the tank and the melted wax will pass through to run down to a corner and out through an outlet pipe into a cooling container outside.

of frames might be given back to the bees to be cleaned up; but there are good reasons for avoiding this practice wherever possible. It wears out the bees, incites robbing, and increases the danger of spreading disease. Anyway, there would still be the trying labor of scraping the frames after the bees had finished with them. A lot of difficulties—all overcome at one stroke by simply running the supers full of dripping frames through the melting tank.

There, honey, wax and propolis are melted away, while steam condensing at the top of the tank as in a self-basting turkey-roaster drips down and washes the frames clean. When using this plan supers full of dripping frames may be stacked up out of the way until ready to run through the tank, for it makes no difference how sticky they are; they will come out clean. Even the grooves in the top bar are clean, which is a big help if one aims to use the grooves at all.

This tank could also be made useful in melting honey where more than a small amount was wanted at one time. Four 60-pound cans is about the top limit when melting honey on an ordinary stove or oil

heater. Even with the most up-to-date equipment for processing honey it must first be melted (liquefied), a process which takes several hours. The wax tank, with a few iron cleats under it to support the weight, would handle from 10 to 20 or more cans at a time, depending on the size of the tank.

It seems likely that as the value of this tank becomes better known it will be considered indispensable to the well managed commercial apiary, especially in the smaller outfits not equipped with steam boilers.

A Successful Honey Week

National Honey Week for 1934 is now history. We are so proud of our local efforts we want to tell you about them in hopes others who have not entered the spirit of the week may be encouraged.

Every store had a window or counter display of honey with Kellogg cards and folders. The food page of the paper carried nearly a column about honey.

Domestic science class featured honey all week in class and Wednesday girls viewed demonstrations by Mr. Wilkins of New Augusta, Ind.

Mr. Benj. Wilkins gave a talk and demonstrations at the Indiana General Service Club rooms on Wednesday. He was secured at state meeting in Indiana, November 8 and 9. Ham was furnished by Swifts; Honey Bread, bakery; crackers, Richmond Baking Company and he served Honey Meringue and Rice Krispie Bars. Ladies of the organization made cake, cookies, candy. Notices were sent out by mail to all beekeepers and honey producers to get out a crowd. The room was filled. The display was so attractive it was left for an electrical demonstration that night making two for the day. They ate up everything. This week, Tuesday, Wednesday and Thursday, will be in an all city electrical show with demonstrations in cooking each day and honey will be used each day.

One of the Service Clubs has asked for a honey and bee lecture.

Now, don't you think our people should have heard about honey at least once with all that? It was work but was planned and quickly carried out. People are willing to help if you tell them what you want.

J. Lake Macdonald,
Indiana.

A New Honey Bulletin

"Uses of Honey" is the title of a new bulletin recently issued by the Oregon State College at Corvallis. The material was prepared by the Department of Food and Nutrition but the author's name does not appear.

Recipes for numerous breads, cakes, candies, cookies, and desserts are given along with salads and sandwich fillings. There are suggestions for the purchase of honey and its substitution for sugar and molasses. It is nicely printed and attractive in appearance and Oregon beekeepers will do well to see that it is widely distributed.

The statement is made that more than a million, eight hundred thousand pounds of honey are produced in Oregon annually. The principal sources are given as alfalfa, fireweed, raspberry, clover, vetch, French pink and bachelor's-button.

New Bulletin

The Missouri State Museum at Jefferson City, has recently published a bulletin by Prof. A. C. Burrill entitled, "Suggested Natural History Research on Habits and Culture of Bees in Missouri." The bulletin is prepared especially for the use of teachers and is designed to suggest observations for students making a study of insects.

Parau Tahitian

By E. L. Sechrist,
Society Islands.

Formerly in charge of the Davis California Field Station of the Bee Culture Office, U.S.D.A., Sechrist is now retired and is spending some time in Tahiti, the wonderland of the South Seas. One of the group of Society Islands, Tahiti is an international winter resort. It is late summer there now.

THIS is a **parau** or talk about Tahiti, although I do not think it will be confined strictly to things Tahitian as I have found, in "All Around the Bee Yard" in several recent issues of the American Bee Journal subjects that have to do with the tropical weather experienced in the United States last summer. For instance, the matter of bees becoming inactive in the middle of the day during very hot weather and refusing to move or sting. I have seen this same condition both in Haiti and in California and at least two factors are to be considered. Sometimes no nectar is available during the middle of the day and then the bees merely "lay off" because there is nothing to do. But the most striking point is to see how bees behave when a temperature is reached which is near the thermal death point of the bee. Bees apparently endure more heat than some other insects, but they will succumb when a certain degree of heat is reached. Have you not seen, on very hot days, bees fail to reach the alighting board and curl up and die almost immediately they strike the hot earth? This is quite common in California and some beekeepers insist on having their hives a few inches above the ground to lessen the danger from extreme heat.

Have you ever noticed, on a very hot day in summer, how, around noon, all insect life is stilled, unless it be the whirring song of a Cicada? Most insects in nature hide from the heat of the noonday sun but when you uncover a beehive, there is no place for the poor bees to hide—they just have to keep quiet and hope that you will go away and quit meddling in their efforts before the temperature within the hive gets beyond their control.

It is often the case that the temperature within the hive is much lower than the temperature of the outside air—the brood temperature must be lower than 100° F. while the sun temperature to which opened hives are exposed may run far above that. By carrying sufficient water, placing it in shallow cells or cavities in the burr combs on top bars, etc., and evaporating it by currents of air

forced through the hive, bees can control the temperature even under very severe conditions but, when hives are opened in the hot sun, the stored water quickly evaporates, the ventilation of the hive by the bees is interfered with—and something happens. I have seen combs melt and honey run out of a hive in California within five minutes after I had "worked" a hive and closed it up. Shifting combs, changing supers, and otherwise upsetting the arrangements the colony had worked out for protecting their young and themselves from the torrid sun had serious results. It appears that bees cannot immediately rearrange their ventilating and protective system after it has been badly upset. Perhaps it may happen otherwise, but I have never seen a colony "melt down" when undisturbed and in normal condition if it had plenty of water. Of course, many things may throw a colony out of normal condition—ants, disturbance of any kind which upsets the regular operations of the colony. Experience has taught me to be careful

how I work with bees when they cannot fly.

As to supplying water when no natural source is convenient, I doubt if a container of any kind or with any sort of floats can be permanently successful. I have seen no way that suits me better than a barrel on end with a faucet or spigot to regulate the flow of water down a trough, either V-shaped or flat and with some cross pieces, or lined with wire netting, to give bees a footing and more working distance. Of course, if piped water is available the barrel is not needed. If slightly salted water is desired, a box of rock salt and pebbles set on top of the barrel cover, is handy. A few buckets of water poured into the box and allowed to trickle down through the cover into the barrel does the trick.

Yes, it is a fine experience to hear the various notes of incoming field bees in the early morning. How early do they go to work and how many of them stay out all night? I'm not so sure but that, here in the tropics, they sometimes work nearly all night,



A corner of E. L. Sechrist's apiary and garden in Tahiti, at Te-ahu-ahu, the "Place of Balmey Breezes." Some of the hives are on benches and the bamboo trellis over them will be vine covered soon. Beyond the coconut trees, in the background, can be glimpsed the dwelling house on the shore of the Pacific whose quiet waters can be seen between the tree trunks.

especially on some of those brilliant moonlight nights when, in the early morning, the moon disputes with the sun for the chief place in the heavens. In Haiti, a blossoming palm tree stood beside my window and many a morning I waked while it was yet moonlight, long before the sun came up, and heard the buzz of myriads of bees on the enormous cluster of bloom. Here in Tahiti it is the same way. One recent morning I waked up and it was as light as dawn but the clock said 2:30 so I decided that it was moonlight. All the same, I went out to see what the bees said about it. Hundreds of them were crowding the alighting boards with their motors humming, apparently just waiting permission to take off. An occasional bee was in the air—I could not tell whether coming or going. By 3:30 the air was full of bees and loads of pollen and nectar were being brought in. I take it that such early workers have a right to do as I do and lay off about 11 o'clock and not begin work again until one or two p. m.

Mr. Harrison W. Smith, long a resident of Java and Borneo but who has been in Tahiti for fourteen years, having selected it as the most desirable spot in the world for him to live in, has his home near me and started me in bees here. His hobby or avocation is introducing into Tahiti useful and ornamental plants and trees from other countries. He needs bees in his work. He is, as he says, "one of the minor manifestations of capitalism," and has inherited enough money to give him education and freedom to work at what he pleases. He is therefore devoting his money, time, and talents to making this a finer country for the people who live

in it. Abundant demonstration of teaching by example is seen in this district of Papeari where well kept yards and gardens are more plentiful than anywhere else on the island. Mr. Smith always has on hand a supply of plants to be distributed to those who will care for them.

He gave me a picture of one of his unique trees in full bloom. It is the Durian of Java, where battles between villages occur over the possession of a single one of these trees because the fruit is so greatly desired by all. It is a time of rejoicing when the fruit is ripe. Mr. Smith's tree fruited last year and this season it was full of blossoms again. Two bees can be seen on the original photograph, located directly above the dots on the lower margin. They are on the basal portion of buds. Other bees are probably deep in the cups of the open flowers.

The Durian is a night bloomer and normally is pollinated by certain moths. To insure set of fruit Mr. Smith has done hand pollinating with a brush but apparently the bees are up early enough in the morning to help with the good work—unless, of course, they force their way into the bases of the blossoms without touching the pollen. I shall try to look into this another season.

The Durian is said to have the most delicious flavor of any tropical fruit but many people are repelled by its odor as are some people by the smell of Limburger cheese. Mr. Charles H. Nordhoff, of Nordhoff and Hall, authors of "Mutiny on the Bounty" and other fascinating books on South Sea life, lives near by and wrote for Mr. Smith some verses on the Durian. The poem is too long to quote entire but a few verses will give an idea

of the reputed flavor and aroma of the fruit. I hope to taste and smell it myself before many months pass.

Said Mr. Smith:

"Tahiti's good enough for me,
And by this distant, tranquil sea
I'll settle down for life.
Beneath these palms I'll meditate,
Forgetting jazz, and real estate,
And politics and strife.

"I've brought a hundred kinds of
fruit,
And ornamental trees, to boot,
To plant about my door.
Not one man in this crowd, I ween,
Has tasted of the Mangosteen
Or Rambutan before!

"And when my trees begin to bear
I hope one day I'll see you there
To act the jury on
The fruit which cheers, rejuvenates,
And strengthens Eastern poten-
tates—
The royal Durian!"

The years passed by:

"A thick mephitic perfume rose—
Each dotard swore despite his nose
He'd taste it ere he died.

"Bananas, garlic and ice cream,
Onions and chocolate would seem
A horrid blend enough.

"That day was many months ago,
But still the man from Borneo
Makes merry in his house.

L'Envoi

"So men whose hair is sparse and
gray
Should travel east without delay,
In ships, canoes, or boats—
To eat the fruit that fires the
mild—
The fruit that helps the growing
child—
The fruit that makes tame women
wild,
And old men skip like goats!"

Since beginning this, I have been out in the apiary going over my bees the first time since the honeyflow began about a week ago. One three-frame nucleus made with a virgin queen two months ago, was ready for a second story.

A light colored grade of honey is being stored at this time. I am trying some shallow supers to find if it is feasible to separate the various honeys and thus get some light, mild flavored fine honey for sale at a fancy price as there is a certain demand here for such honey. The honey usually sold here is from mixed sources and too much like strong molasses to please most people.

Just what is the best way to handle bees here remains for me to find out and I anticipate considerable interesting experimental work before I learn how best to make a living by keeping bees in Tahiti.



DURIAN FLOWERS
9 Nov. 1934

The blossoms of the Royal Durian tree. The flowers are white and all on the lower side of the branches and the tree in full bloom is a strange sight. The fruit is said to have a most delicious flavor and is liked intensely in spite of its offensive odor.



A Plea for the Honeybee

By John H. Lovell,
Maine.



Garden columbine, *Aquilegia vulgaris*, a bumblebee-flower. Note the perforation in the bend of the spur on both the right and the left sides of the flower.

IN A RECENT legal action brought by a nurseryman against a beekeeper (Reported in the American Bee Journal, August, 1934, p. 371) it was claimed that the honeybee caused large loss by damaging hot-house flowers. The case was dismissed, partly on the grounds that it had not been shown that it was the bees of the defendant that had wrought the injury. But the reputation of the honeybee was not cleared of the above accusation, and it seems to have been assumed that it was guilty. We should like to put in a plea for the honeybee, for we believe that it can be very largely, if not entirely, exonerated from the charge of injuring flowers.

It is noteworthy that the student who appeared for the plaintiff could not determine the names of the bees brought into court in jars. If they were honeybees it would certainly seem as though a graduate of the School of Agriculture at Cornell should have had no difficulty in recognizing them. If they were bumblebees their identification might require more careful attention, since the workers vary very widely in size. As we do not know where, or under what conditions they were collected, it is possible that they were neither honeybees nor bumblebees. It is to be regretted that they were not submitted to someone who could correctly name them. We have here an amusing case where no one could determine whether the supposed guilty party, or an innocent one, was actually brought into court.

The flowers of the snapdragon in particular were declared to have been injured by the visits of honeybees. The snapdragon is a bumblebee-flower *par excellence*, that is, it is adapted to pollination by bumblebees. When the blossom first matures, the lips are so firmly held together that the honeybee can not push them apart. Later on they become more

lax, and smaller bees are able to enter the corolla and feed on the nectar. The writer has never seen a honeybee visit the flowers. The continental flower ecologists of Europe list some five species of bumblebees as pollinators, but none of them mention the honeybee. The only recorder of the honeybee as a visitor to this flower is Douglas of England, who also lists four species of bumblebees. Two European observers have noticed that bumblebees sometimes perforate the spur and steal the nectar. I can find no evidence of injuries caused by honeybees.

As a rule honeybees do not pay much attention to bumblebee-flowers until they have been punctured by bumblebees. The turtlehead, *Chelone glabra*, which grows in wet land closely resembles the snapdragon in size and form. I have never seen the

corolla entered by any bee except bumblebees, though I have had it under observation for a long time. I once placed several clusters of the flowers in water a few feet in front of a hive of bees. Of the hundreds of honeybees coming and going not one paid the slightest attention to them. But notwithstanding their unusual position, the bumblebees presently found them and visited every flower.

It has been reported both in Europe and America that honeybees sometimes bite holes in flowers in order to more easily obtain the nectar. But the instances in which the observer states that he actually saw honeybees perforating the flowers are comparatively few. On the other hand bumblebees have frequently been seen to perforate flowers, and in Europe more than 300 kinds have been listed which are thus plundered by bumblebees. The female bumblebee is several times the size of the hive bee, and has much larger and more powerful jaws. Examined un-



Above, the Turtlehead, *Chelone glabra*, a bumblebee-flower. I have never seen this flower visited by honeybees.

At right, Jewelweed, *Impatiens biflora*. Note the perforated spur.





Scarlet Sage, *Salvia splendens*, a South American hummingbird-flower. The corolla projects far beyond the calyx. To obtain the nectar a bee must bite through both.

der the microscope the mouth parts of the honeybee do not appear to me well adapted for biting holes in flowers. As figured by Mueller the maxillary blades of the female of the field bumblebee (*Bombus agrorum*) are longer, narrower and more sharply pointed than those of the honeybee. As figured by Snodgrass the maxillary blades of the honeybee are broad, rather blunt, and hairy at the tips and on the side. They might bore into succulent tissue, as in some orchids, but they are not well adapted to puncture the calyx, corolla, or nectary.

Anton Kerner in his *Natural History of Plants* relates that in the Alps bumblebees bite holes in certain flowers to such an extent that their extermination is threatened.

A catchfly (*Silene Pumilio*) grows in the Eastern Alps. The great majority of bumblebees which visit it industriously decline to enter the flowers properly, but hanging on to the inflated calyx, bite a hole in it and take the honey. Though this catchfly blooms freely during the summer, one may see hundreds of the plants which never produce ripened fruit. As a result it has a very limited distribution. The same is the case with another catchfly in the Southern Alps, and several species of aconite and *Corydalis*. These endemic species are becoming extinct because the bumblebees steal the honey without rendering any service in return.

In this connection it is of interest to note that all species of bumblebees are not equally destructive to flowers. The tongues of bumblebees vary greatly in length, not only in different species, but also in the same species the tongues of workers are shorter than those of the queen. In the different species the tongues of

the queens may vary from about 9/25 of an inch to 4/5 of an inch in length; and the tongues of the workers from 8/25 of an inch to 3/5 of an inch in length. Now the very long-tongued bumblebees which are able to reach the nectar seldom bite holes in flowers. It is the species with shorter tongues which perforate the blossoms since they can obtain the nectar in no other way.

It should also be remembered that only the queens are on the wing in early spring and at all times while there are flowers in bloom. The workers do not appear until about a month later than the queens begin to fly, and the males not until July.

After the holes have once been made, honeybees guided by their keen powers of observation and led by a bad example, frequently make use of them to plunder the flowers. Then if someone should observe honeybees stealing the nectar through these perforations, and there happened to be no bumblebees present, they might easily conclude that the honeybees had made the punctures. A case of circumstantial evidence. But it has been asserted both in Europe and America that honeybees have actually been seen to puncture flowers, but no claim is made that they do so as frequently as do the bumblebees. I should hesitate to say that honeybees never bite holes in flowers, but more evidence is desirable on this point, as a mistake might easily be made. Not long ago it was asserted very positively that honeybees puncture grapes, but it has been since shown that apparently in all cases they make use of small holes already made.

Let us briefly consider a few common flowers which are frequently perforated by bumblebees. The garden columbine is a bumblebee flower. The petals are extended into hollow spurs 3/5 to 4/5 of an inch in length and nectar is freely secreted in the curved upper ends. The flowers are pendulous, and a bumblebee in order to obtain the nectar, as nature intended, must cling to the under side and insert its proboscis into the hollow petal. I have a large number of these plants growing on my grounds, and every spring the petals are punctured by bumblebees and robbed of their nectar. Honeybees also make use of the holes for the same purpose. In some instances there are two lunate-shaped holes close together, apparently made by the mandibles, or there may be only a narrow slit, which might be made by the laciniae. In the photograph two holes are shown at the bend of the spur. According to my observations honeybees do not appear to resort to the flowers until bumblebees have made the punctures.

In Europe it was observed by Mueller that the garden bumblebee (*Bombus hortorum*), which has a

proboscis long enough to reach the nectar, does not puncture the flowers. But the ground bumblebee (*Bombus terrestris*), which has a proboscis so short that it can not reach the nectar legitimately, very frequently bites holes in the spurs. The honeybee, according to Mueller, also behaves in the same way, but it often makes use of the holes already made.

Bumblebees puncture the flowers of the common larkspur (*Delphinium elatum*) and the monkshood (*Aconitum Napellus*); but there is no record of honeybees ever doing so, or even making use of the perforations after they have been made. The flowers of bleeding heart and one or two species of *Corydalis* are also perforated by bumblebees, and are then robbed by honeybees. Thus it seems possible that Mueller may have been mistaken.

Occasionally in this locality females of *Bombus fervidus* visit the brilliantly colored flowers of the scarlet runner bean normally. Honeybees have not sufficient strength to depress the keel and obtain the nectar in a legitimate way. But sometimes a honeybee may be seen flying from flower to flower, robbing it of a part of its nectar through a crevice at the base of the standard. Nearly every year this vine is under cultivation in my garden, but I have never known bumblebees to bite holes in the flowers to any extent except in 1908. On August 14th of this year there were many workers present of *Bombus terricola* which perforated the flowers as fast as they matured—so far as I could discover not a blossom escaped. The holes were all on the under side of the calyx on the left hand side, which may be explained by the fact (also recorded by Mueller) that the more powerful bees usually alight on the left wing (ala) of the butterfly-shaped blossom.

The honeybees promptly discovered the holes and used them diligently for gaining the nectar. There was no pretense neither on the part of bumblebees nor honeybees of making normal visits. I have never seen bumblebees present again in such large numbers, or all or most of the blossoms perforated. They have been almost entirely neglected by honeybees. My apiary is less than 100 feet away, and it seems certain that if honeybees could puncture the flowers they would do so every summer. Knuth observed in Germany that the flowers of the broad bean were visited by honeybees after they had been perforated by bumblebees.

On August 10th I examined a large number of flowers of the spotted touch-me-not (*impatiens biflora*) and found none of the spurs perforated. *Bombus vagans* (the wandering bumblebee) was visiting the flowers normally. But on the 23rd of this month I found hundreds of the spurs punc-

tured and both bumblebees and honeybees stealing the nectar. There can be little doubt but that the punctures were made by the bumblebees.

The past summer I found many flowers of the bee balm punctured and only bumblebees robbing them of their nectar. I might mention many other flowers which I have observed punctured, but the illustrations given are sufficient.

The behavior of bees in puncturing flowers has several times been briefly discussed in the American Bee Journal, especially by Mr. Pellett, who seems to have reached the same conclusions as myself. In the Journal for August, 1926, p. 389, the opinion of the late Thomas Meehan is quoted to the effect that he had seen honeybees in large numbers boring the corollas of the scarlet sage (*Salvia splendens*) near the base from the outside. It was late in autumn and most other flowers were gone and there were no bumblebees present. This is a South American flower, pollinated by humming-birds. Bees would be compelled to pierce the calyx in order to reach the base of the long corolla tube. Meehan was a horticulturist and botanist, but he does not appear to have been an entomologist. I do not find his statement wholly convincing.

In view of the evidence it may perhaps be admitted that honeybees do sometimes puncture flowers, but it is desirable that such observations be confirmed by further examination. As a rule the punctures are first made by bumblebees, and then used by honeybees.

Our Native Cacti

In recent years there has grown up a tendency on the part of gardeners to specialize with some one group of plants. Gardens with a great variety of peonies, or iris, or dahlias are common. More and more do we find flower lovers looking for opportunities to enter some field which is not commonly occupied by their neighbors.

"Our Native Cacti" by Ethel Bailey Higgins is a book which will appeal to this kind of gardener. It is a delightful volume treating at length a group of plants not commonly well known. Few people realize that there are many hundreds of species of cacti which are native to North America. The greater number of them are in the southwestern states and Mexico although some grow as far north as Canada.

This book is illustrated with a large number of photographs of the different species of cacti with several in color. A cactus plant is very attractive when in bloom and a collection of them offers most unusual opportunity to have a unique window box or garden. The book sells for

\$2.50 and may be secured from the publishers, A. T. DeLaMare Company of New York.

A Happy Occasion

The eighty-fifth birthday on September seventh of J. F. Merrill, well known beekeeper of Corinth, Vermont, was the occasion of a surprise party given by his friends. Nearly a hundred friends coming from three different states composed the group. The remnant of the old time Corinth Drum Corps of which Mr. Merrill was a member furnished music for the day.

Although there were once sixteen members of the corps, only two, Chester Grant and J. F. Merrill still remain.

In spite of his advanced age, Mr. Merrill still cares for his bees and sells his honey to a retail trade.

Tansy Leaves for Ants

I have found most beekeepers do not know that tansy leaves will keep ants out of beehives. I have used this repellent for about twenty years and found it very successful.

W. E. Stepp,
Kansas.

Wisconsin Honors Adams

IN BOTH the Department of Markets and as Chief Apiary Inspector, Mr. Adams has done fine work in his state. He was unanimously chosen

by the State Association to receive this year's certificate of recognition, now a yearly event in Wisconsin Association affairs.

The Wisconsin State Beekeepers' Association

Recognizing
the eminent services of

Carl D. Adams

for many years of devotion to the improvement of the beekeeping industry and the welfare of Wisconsin honey producers, presents this

Testimonial

upon the recommendation of the Executive Committee of the State Beekeepers' Association, and with the approval of the Board of Managers.

In Witness Whereof, it is sealed and signed by the President, Vice-president and Corresponding Secretary of the Association.

A. N. Seefeldt
President

George Jacobson
Vice president

H. F. Rahmlow
Corresponding Secretary



By G. H. Cale

ABSENCE makes the heart grow fonder! Must be so because there are a number of letters wondering what has become of me during the interval since the January number. The truth is there wasn't enough room for everybody in February so I took a back seat. It is my privilege anyway because every page of each issue of the Journal passes through my hands as Managing Editor and, therefore, if I want to pass the palm to someone else, I do so.

— o —
Since last appearance, we have been in the "Deep South" and back again. I do not suppose any of the four who went from here to the Valdosta Conference will ever forget either the trip or the meetings. Someone will have to be a skillful social engineer to stage another time just like it.

— o —
The enjoyments of the South are attractive to the nth degree. The first warm day at Tallahassee, Florida's balmy capital, brought a sigh of relief from cares and from that constant physical resistance to northern winter which one puts up all the time whether he is aware of it or not. Then the country is so different. Broad leaves give way to evergreens, bare trees to flowers, perpetual green leaves, red roads, nigger cabins, bird songs, pleasant people, warmth.

— o —
H. O. White of Ontario has answered my query about using Modified Dadant hives for comb honey. He says, "For ten years up until 1934, I have produced 10,000 sections a year using 10, 11 and 12-frame hives with frames 11¼ inches deep. I would not consider comb honey production without a larger hive and I do not want to use the two-story Langstroth hive for the purpose. I thought you would be interested to know that some comb honey producers use large hives."

Thanks, Mr. White. I will have to try it. I do not pretend to be a comb honey man, however, having produced only a few tons of it in my whole career. I have always thought that it would be better if our production were divided between the three kinds of honey—extracted, comb, and bulk comb. Then it would not be so hard perhaps to find a ready market because there is that much diversity in the three products that they do not conflict.

Quite a number of letters have come complimenting us on the January number. Some readers feel that the old masters about covered beekeeping from A to Izzard and that there is not much left to learn. Perhaps so. I feel that there is much new to be expected in beekeeping, but why should not the fundamentals be just the same today as they were yesterday and why should they not remain the same tomorrow? Fundamentals are always unchangeable.

Can it be that we do not understand fundamentals today as well as the older beekeepers understood them in the days gone by? If that is true, it is a reflection upon the training of the modern beekeeper.

— o —
It has been another mild winter. Looking at the calendar, I find three good flight days marked in December, two good ones in January with at least six days when cluster change could be made. Only one period of four days of zero and sub-zero weather and two fine flight days so far in February with spring rains already commencing and frost going out of the ground.

With these conditions, winter losses should not be heavy. The roads are now so bad, however, that we cannot determine just how outyards are. Early examinations are desirable but there is no fun getting stuck in the mud, to make that trip.

— o —
It has been a wet two months. More cloudy and stormy days than pleasant ones so locally some of the lost moisture of the past two drouth years is being returned to the subsoil. Farther west and north, this is not true yet. They are still dry and the long range weather forecasters are too free with their promises of another dry year.

— o —
It will take several seasons of good moisture and favorable conditions to bring the white Dutch clover back in this territory. Our last good white Dutch clover flow was in 1927. In parts of Iowa there was a good flow from this source in 1933. It did not last long. The bumper crop was in 1927.

— o —
The last ten years have witnessed a change through the Middle West from white Dutch clover as a major honey plant to biennial white sweet clover as the source of surplus hon-

ey. This same period has seen almost complete drainage of parts of the Mississippi River bottoms and the increase of farming in former wastelands to the point where fall flowers are so retrenched in distribution that dependable flows from them are only to be found in certain very restricted locations. Years ago in the Mississippi Valley, fall flows were a certainty and the elder Dadant considered August and September the prime surplus honey months.

— o —
Well, perhaps by this time next month, there will be something to tell about how things are in the apiaries. We will be changing many of our locations this year so we are particularly anxious to make an early check.

Yakima Asks Withdrawal of Registration

Believing that a law requiring the registration of beekeepers as a means of collecting funds for inspection is impracticable, the Yakima County Beekeepers' Association, meeting January 26, voted to ask the legislative committee of the state association to withdraw the registration bill prepared for introduction in the state legislature.

States which have had such a law have found the assessments could not be collected, it was reported, and the consensus of the group was that the enactment of such a law was inadvisable.

The meeting voted to ask the legislative committee to work for a law compelling growers of fruit, vegetable and potatoes to use other sprays than arsenate of lead, that the loss of colonies from poisoning might be reduced. The beekeepers said that other sprays than arsenate of lead are known and that growers could use them as a means of cooperating with the industry. I. L. Neill, Washington.

Vaporings of a Rookie

Again, our entomologists and orchardists use various fungicides in sprays that are stepped up to a strength just under that required to kill or burn green vegetation, but strong enough to destroy the enemy. Is it not quite possible that some chemical or substance could be found which could be stepped down in strength to a point where it would not kill the larvae but kill or eliminate the disease. Is not this worth trying?

I don't believe any ground will ever be gained in trying to select disease resistant bees. You know the trouble the Dutchman had getting his horse to live when shoe pegs were substituted for oats.

L. F. Childers,
Missouri.

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BEEKEEPERS ITEM, San Antonio, Tex.

FROM THE LITTLE BLUE KITCHEN



THE BEEKEEPERS needn't worry so much about the scientists evolving stingless bees, but if they should turn out any wingless ones it wouldn't be quite so good!

Both physicians and metaphysicians agree that fear is the worst enemy to human health. It is also about the worst handicap anybody can have in making a success of any undertaking. This applies to religion, education, health, business, farming, beekeeping, and equally, also, to housekeeping. The person who is afraid to tackle a job is whipped before he starts it. The one who has faith in himself is half through before he begins. This isn't a "preachment" but just a bit of truth which Honey Lady takes joy in sharing with Blue Kitchen readers. Most of you doubtless knew all this beforehand, but sometimes a re-stated truth seems like a new one because of its new wording. Therefore and hence, this bit of a sermonette as we start out together to talk about honey ways for March.

The Bee Line

A dandy bee line to extra leisure for the housewife is to have handy a wall pad for needs to be filled at the grocery when going to town; a waste basket somewhere in the kitchen, a clock in full view, a pair of kitchen scissors, and containers for salt, pepper, flour, sugar, etc., right at hand on the table where food is prepared for cooking. These are a few short cuts; others will suggest themselves if you sit down for just a few moments and glance around your kitchen. And, if you use honey as much in cooking as Honey Lady does in her Blue Kitchen, you'll surely have a jar of it within reach at all hours!

Don't fail to realize when the Bible speaks of lands "flowing with milk and honey" that the writers of the sacred Books knew even in those remote days that the combination of these two liquids is a food rich in nutrition to the last degree!

In these days of in-between season eating, an apricot pie will be relished. Stew the apricots first with honey; mash thoroughly and use for the filling. If you want this dessert to be

specially scrumptious, cover with a meringue. This may also have a honey flavor by adding to the eggs after they are lightly beaten, one tablespoonful of extracted honey in addition to three-fourths tablespoonful of powdered sugar.

Now that our good old friend the rhubarb is brightening up the garden corner where it is, by all means gather the lovely pink stalks and make sauce of them using honey as a sweetener. Rhubarb pies also are not so hard to take! Honey as a sweetener makes of rhubarb dishes the very finest spring tonic that can be found, not barring those sold in bottles, and which are not half so pleasing to the palate.

One of the most delicious rhubarb-honey desserts is a deep dish pie, i.e. fill individual deep baking pans with stewed rhubarb; then cover the top with a rich crust, duly "ventilated" with some little fancy design. Honey Lady first ate such a pie at a very smart tea room in an Ohio city, and liked it so much she soon concocted several of these dainty pastries in Blue Kitchen. Try out the idea on **your** family!

If the man of your house is as fond of sassafras tea in spring as the lord and master of Honey Lady's domicile, you'll be having a pot of it simmering on the back of the stove these days. If he likes it extra sweet offer him the honey pitcher. The combination makes another splendid spring tonic!

Did you ever try sweetening baked beans with honey instead of molasses? The result is delightful. If you don't happen to have a "baked beans" recipe, this one may help out. It was furnished the Hartman Printing Company of Springfield, Ill., for a cook book by a member of a woman's club, but Honey Lady herself substituted honey for the molasses content. The result was so good, she now shares the instructions with Blue Kitchen readers.

Baked Beans with Honey

- 2 cups beans
- 1 cup tomatoes (add pinch of soda)
- ½ cup extracted honey
- 2 onions (diced)
- 1/3 teaspoon mustard

3 or 4 slices bacon

Mix all together and bake 4 hours in a moderate oven.

— : —

When serving ice cream either homemade or bought from the corner drug store, one can make a delicious sundae by pouring over either vanilla or chocolate cream slightly heated honey.

— : —

A nice surprise breakfast feature is the Cornflake Honey Muffin. Here is how to make them.

- $\frac{3}{4}$ cup corn flakes
- $\frac{3}{4}$ cup graham or wholewheat flour
- 1 cup white flour
- 1 tablespoonful shortening
- $\frac{1}{4}$ teaspoon salt
- 1 egg
- 1 cup milk
- $\frac{1}{4}$ cup honey
- 3 teaspoonsful baking powder

Directions. Mix melted shortening with honey; add the one egg, slightly beaten; now add the milk; then stir in the dry ingredients, thoroughly blended beforehand. Bake in well greased muffin tins 20 to 25 minutes in hot oven.

— : —

A recent U. S. Farmers' Bulletin gives this helpful statement about honey. "The fact that honey consists principally of sugar and water and is slightly acid, suggests that it is a suitable substitute for molasses in cookery. As a matter of fact it can be used in the place of molasses in all forms of bread, muffins and cakes, and makes a more delicately flavored product. It contains less acid than molasses, however, and so requires less soda when it is substituted for molasses in recipes which do not include sour milk or other acid and the cook must be careful about the amount of soda used." The bulletin goes on to say that after many experiments in the U. S. laboratories it was found that "the allowance of soda to a cupful of honey very generally ranges between $\frac{1}{4}$ to $\frac{1}{2}$ of a level teaspoonful."

— : —

It is nice to know that a teaspoonful of the new processed honey acts like magic in stopping a dry, hacking cough!

— o —

Don't forget that honey is one of the best health foods, especially in the spring when one needs a gentle laxative to help in the spring house-cleaning of the body. Also it is a mighty good thing for the soul's health to study the ways of the bee. Such wonderful patience, such marvelous thrift; such determination; such neatness; such industry! Nature has provided in the bee not only a manufacturer of her choicest and most delicious food, but also a teacher to all who will sit at her feet with open eyes and receptive heart!

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THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

DISPOSAL OF CAPPINGS

Is the cappings dryer (in the extractor) or the draining process on the uncapping table or the melting process the best? It is a question the answer of which would be welcomed by many thousands of your readers.

MANITOBA.

Answer.—We uncap our combs over what we call a "capping can." The capping can, or uncapping can, is made of two cans of about the size of an extractor can. The inner one has for a bottom only a strong screen. It hangs inside of the other and receives the cappings as they are cut off from the combs. The outside can is made just like an extractor can, with a faucet.

The cappings, as they are cut, drain from the inner can into the outside one. At the end of the day's work, the honey from the cappings is drained out of the outer can.

Sometimes two days' cappings are gathered into the inner can. When it is desired to melt up the cappings, they are drained out of the inner can, washed with fairly warm water and rendered into beeswax, by melting. The water which has washed them is used to make vinegar. Sometimes it is too weak in honey, sometimes too sweet. It takes about two pounds of honey to the gallon to make good vinegar, so we either add more water or more honey to get it to the proper strength. Very good vinegar is thus made.

TRANSFERRING TO MODIFIED DADANT HIVES

Last spring I transferred six colonies of bees to Modified Dadant hives. I gave them the best combs of brood in the standard frames. How and when is the best time to replace the combs with full sheets of foundation?

INDIANA.

Answer.—If you want to replace some of your old combs with sheets of comb foundation, you should wait till the crop is over. If the combs that you wish to replace have some worker brood in them, you should put them at the outside edge of the brood chamber and when the brood is hatched out remove them, or put foundation in them. You must not leave any of your combs entirely out at any time, for if the bees have only a little comb to build, in the busy season, they will be sure to build drone comb.

To transfer a ten-frame Langstroth hive colony from that size to the Dadant is not difficult. You should do it in the busy season, but before the crop is on very great.

TRANSFERRING AGAIN

I have one swarm of bees in an eight-frame hive and wish to transfer them into a ten-frame and save all the brood possible. The comb is built cater-cornered across the frames so I can't transfer the frames at all but I was wondering whether I couldn't pull the bottom board off of the old hive and set it on top of the new one, super fashion and when the bees get to working good in the new hive, slip a queen excluder between the two. Then after the brood is all hatched in the old hive remove it. Do you think that would work?

IDAHO.

Answer.—Your idea is good and you can transfer those bees into a ten-frame hive by filling the frames of that ten-frame hive with sheets of foundation and placing the hive under the body of the hive they now occupy.

When the queen moves down into those lower combs and begins to lay eggs in them, or say, a couple weeks later, when she has plenty of brood below, remove the eight-frame hive, take out the brood combs and transfer them into frames with wires so that they may be placed in a hive body right above the other colony. You must, however, avoid transferring any of the drone comb or drone brood; there is always more of that than you need. In order to do the transferring properly, it may be well for you to have our little pamphlet on transferring bees, which we sell for 10 cents.

You will thus have a very good colony in larger hive than it is now and will have all the combs straight.

CAUCASIANS IN TEXAS

Would it be wise to use Caucasian bees for the best results in this part of Texas? I have read articles saying that Caucasian bees winter better because they will not break the winter cluster like Italians. In this part of the state the temperature varies, one day being around 80 degree F. and the next day around 30 degrees F. staying that way for about four days and then the fifth day running around 80 degrees F. again. The Italian bee will break the winter cluster and fly when the temperature reaches around 55 degrees F. and this makes the bees use more honey for wintering.

TEXAS.

Answer.—I find an objection to the Caucasian bee which does not exist with the Italian. Its color and general appearance is so similar to that of the common black bee that it is almost impossible to know when there is some mismating.

With the Italian bee one can always tell when there is some mismating. So we are always able to keep them pure more easily. The breaking of the cluster in winter when the weather gets warm is not to my mind a very bad fault. We winter Italians here as safely as common bees.

CLIPPING QUEENS—UNITING

(1) I bought several colonies of bees. When moving them home, I placed them on a south screened-in porch. Since then, a large number of bees have come from the hive. Why should they leave the hive? Could screen wire be put across the hive entrance?

(2) What is the object in clipping queens' wings?

(3) What is the sign of a failing queen?

(4) Some of the hives I bought were in very poor condition. When would be a good time to transport them to hives of good structure?

(5) Can I combine two weak colonies and make one strong one? How should it be done?

(6) What does the bee use pollen for?

ILLINOIS.

Answer.—(1) I don't understand your question. If your bees are located on a screened porch, the bees will of course fly out when the weather is pleasant. What do you expect them to do? They should be allowed free flying in good weather.

(2) We clip queens' wings to keep them from flying away with a swarm; also to recognize them and know their age.

(3) When a queen ceases laying eggs plentifully in summer, it is a sign that she is failing.

(4) Colonies that are in poor hives or that are not in movable frames should be transferred. Send us 10 cents for a booklet

on transferring bees. It should be done in spring.

(5) You can easily combine or unite two weak colonies. But you should know which queen is the poorer of the two and kill her. you need to examine your two colonies from time to time and use your judgment.

(6) The bees use pollen to make the pap for their brood.

PRODUCTION PROBLEMS

(1) How many colonies would you advise to keep in one apiary in this part of the country?

(2) When would you advise to put on the second hive body in the spring? Our queens usually start laying about March 1.

(3) When should I put on the comb honey super? Our bees make a living of their own about May 1. How would June 1 be to put on the comb honey super?

(4) How would it be to put the comb honey super between the first and second hive bodies eight or ten days before the honeyflow and then remove the second hive body?

(5) How many colonies does the average good beekeeper keep in one apiary in your locality?

(6) Do you put on the comb honey supers before June 1?

(7) About how many colonies do you keep in your own apiaries? MISSOURI.

Answer.—(1) I am not sufficiently acquainted with your part of Missouri to advise as to the number of colonies you should keep in one apiary. But if you have a fair amount of bloom, I would recommend the keeping of between 50 and 75 colonies in each apiary four or five miles apart.

(2) You do not state how large your hives are, so I am unable to advise as to the second body to be put on. But if your hives are only eight-frame Langstroth hives, you had better put on a second story, early in spring. If you use the Dadant hive, you need not put on a second story at all, but use supers just as soon as the crop begins.

(3) Comb honey supers should be put on as soon as the bees begin to harvest surplus honey, as soon as they whiten their combs, in May or June.

(4) If you have small hives, it will do to put on the comb honey supers as you suggest.

(5) In our locality, the average beekeeper keeps about 75 colonies in one apiary. Same answer to No. 7.

(6) Put on the comb honey supers as soon as the crop begins to show fresh honey in the hives.

BOILING FRAMES

(1) Are frames that are infected with American foulbrood absolutely safe after being boiled? What solution should be used and how long should they be boiled?

(2) Could I use a 50-gallon wooden barrel fitted with a heavy screen about four inches from the bottom, this screen being to keep waste off the floor of the barrel? My idea is to fill this barrel with old comb, cover tightly, make an opening at the bottom of the barrel to let melted wax and steam escape. Would this work? About what per cent of the wax would I get this way? MINNESOTA.

Answer.—(1) We prefer to pass the frames in the blaze of a torch. But there is no doubt that boiling will render them safe. There is hardly any need of solution if they are boiled, say fifteen minutes. The length of time of boiling is of no importance if the boiling is thorough.

(2) To render beeswax it is not necessary to use a barrel. We use an ordinary wash boiler with water and when the combs are thoroughly melted, we dip out the water in which they are, with the wax and residue and allow the wax to cool, removing the residues and pressing them in a sack. In this way all the wax is secured. They make presses on purpose to do this work, but unless you have a great deal to render, you may use an ordinary cider press.



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Beekeepers in this country are increasing their holdings and new beekeepers are establishing themselves along the Great Northern Railway in these states. Diversified farming and live stock are similarly favored by low cost production.

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ILLINOIS NOTES

Bee and Honey Broadcasts

Station WROK at Rockford, Illinois, is devoting ten minutes of its "While the Horses Rest" Hour every other Friday (Jan. 18, 1934 and alternate Fridays) to a discussion of various phases of beekeeping and honey production. These talks are given by members of the local beekeepers association.

Beekeeping Short Course

The Annual Short Course in Beekeeping, given by the University of Illinois, as a part of the Farm and Home Week Program, seemed to be a decided success, with a total registration of 75 individuals, a large number of whom attended all sessions, the average attendance at each period being 41. Many seemed to consider it a real school because notebooks and pencils were much in evidence.

Regularly scheduled speakers included Mr. Cale of the American Bee Journal, Mr. C. L. Duax, State Apiary Inspector; Mr. Wesley Osborne, Treasurer of the State Association and Mr. Burks, Mr. Lynn, and Mr. Milum, of the University of Illinois. Mr. Stewart, Secretary of the Vermillion County, Indiana, Association; Mr. Bell of Kingston Mines, and Mr. Whiting of Roscoe, Illinois, added interest to the meeting by their extemporaneous discussions. Speakers unable to be present were Mr. Killion, on business in Florida (we envy him), Mr. Peterson, drafted for jury service, Mr. Earle, because of illness, from which we hope he has fully recovered.

The bee and honey exhibit as a part of the exhibit of the utilization of farm products, created considerable interest among the regular Farm and Home Week visitors. This display included a demonstration of the method of supering in producing comb and extracted honey, the preparation for the market, and the utilization of honey in foods. Several sheets of recipes were available, as well as the mimeographed circular—"Illinois Honey—A Useful Sweet." The latter may be obtained by dropping a post card request to the Office of Information, College of Agriculture, Urbana, Illinois.

Piatt County Association

The Piatt County Association held its annual meeting at the Monticello Community House at 1:30 p. m. Sat-

urday, January 18th, with 11 in attendance, all of whom joined the Association or promised to in the near future.

The election of officers resulted in reelection of Williard H. Smith, of Deland, as President, and Emory Warner of Monticello, as Secretary-Treasurer. Resolutions were passed favoring the continuation of the appropriation for apiary inspection and the State Beekeepers' Association. V. G. Milum of the University of Illinois, was the visiting speaker.

Vermillion County Association

This association plans to hold a meeting on Wednesday, February 20, at the Farm Bureau Office, at Danville.

V. G. Milum,
Illinois.

Honey Code Again

Prices for honey are lower in Yakima markets than in other sections of the country, according to beekeepers who brought this up in their discussion favoring a code for honey production at the December 29 meeting of the Yakima County Beekeepers' Association.

The wholesale price in Yakima is 5½ cents a pound, and that ruling elsewhere is 6 cents.

R. E. White of Olympia, state supervisor of weights and measures, discussed the procedure of drafting a code. He advised the appointment of control committees for the principal producing districts of the state, and added that district regulations must not conflict.

I. L. Neill,
Washington.

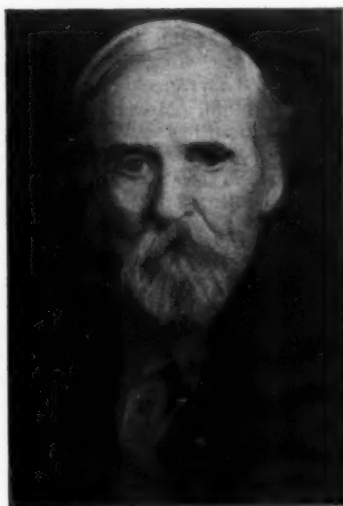
Washington Report

The Washington State Association held their annual November convention with the largest attendance that Washington has had for many years with hope, optimism and enthusiasm prevailing. An amended constitution was presented by a committee that made drastic changes. The new draft was adopted.

The Association recommended to its legislative committee that the moving of bees in the Washington law be placed under the supervision of the district inspector; that bees be registered; that stands of bees with American foulbrood when inspected by the district inspector shall be immediately destroyed by burning. These ideas were recommended to be incorporated in the state law.

The Association elected two committees, one on fair promotion and one on American Honey Institute. J. W. Ware, of Puyallup and E. J. Campbell were elected Honorary Life Membership.

J. W. Ware recently ended his 95th year and has kept bees for over eighty years. During the past year, he took care of his forty colonies of golden Italian bees. We venture the opinion that he is the oldest active beekeeper in the United States and that he holds the record for the longest period of continuous beekeeping. **We invite competition.**



J. W. Ware, Puyallup, 95 years old; over 80 years a beekeeper. Who can beat that?

M. C. Danforth, of Gig Harbor, was elected president; J. B. Espy, of White Swan, vice-president and M. F. Mommsen, of Tacoma, secretary-treasurer.

Enthusiastic Meeting of Utah Association

One of the most enthusiastic meetings and one of the biggest was held by the Utah State Association, Hotel Newhouse, Salt Lake City in January. A. W. Anderson, president, in his welcoming address said—"Whether our industry prospers or not depends on the beekeepers. Self interest should take the form of interest for the industry, for if our industry prospers, we prosper. Let's have co-operative action and not work like a span of horses pulling against each other. With the drought at an end and more snow in the mountains, the outlook for a larger crop this year is good with prices higher.

According to Dr. Hendricks, state apiarist, Utah beekeepers in 1934 produced 2,243,069 pounds of honey from a total of 54,709 colonies in 1365 apiaries.

Standardization as a means of further cooperative marketing was urged by Dr. Wandless of the Utah

State Agricultural College in his talk on "Co-operative Marketing." He cited experiences and success of the Utah Poultry Producers' Association to illustrate the point and urged beekeepers to follow this example.

M. F. Stone, of Ogden, representing the Superior Honey Company, reported on the Georgia meeting. R. G. Reese described wintering. H. A. Welling, secretary of the Utah Farm Bureau, arranged so beekeepers might join with the Utah State Farm Bureau federation meetings at the time of the convention. Joseph A. Anderson, president of the federation, invited the beekeepers to become a unit of the State Farm Bureau organization. They took a vote and unanimously agreed to join.

In a final roundtable talk preliminary steps were advocated to put bee disease inspection work on a better basis.

The following officers were elected: A. W. Anderson, Salt Lake City, president; Reuben Rhees, Ogden, vice-president; Leslie Walling, Salt Lake City, secretary-treasurer.

Glen Perrins,
Utah.

County Cooperation in Wisconsin

Over \$2500 has already been appropriated by thirteen counties to cooperate with the Department of Agriculture and Markets in its 1935 bee disease campaign. Interest in eradication of disease is receiving unusual support this year from county boards according to Mr. Chambers, state entomologist, and is considered highly necessary. The thirteen counties reported to date include Brown, \$200; Dane, \$300; Grant, \$100; Jefferson, \$75; Kenosha, \$200; Marathon, \$50; Ozaukee, \$200; Milwaukee, \$500; Sheboygan, \$50; Vernon, \$100; Washington, \$200; Waukesha, \$500; and Waupaca, \$100.

County funds will be matched dollar for dollar by state funds as far as the state appropriation will permit. Wisconsin Trade News Bureau.

Pennsylvania Association Report

The annual meeting of the Pennsylvania State Association was held during the Pennsylvania Farm Products Show, Harrisburg, week of January 21-25, in a two-day session which was full of valuable information. The principal speakers were Allen Latham, Norwichtown, Connecticut; Chas. A. Reese, of the Inspection Service at Columbus, Ohio; M. G. Dadant, of American Bee Journal, Hamilton, Illinois. Other speakers were: J. S. Fleck, H. B. Kirk, E. J. Anderson, A. T. Keil, John H. Hess, Jerry C. Frazer, Enos H. Hess, Frederick Hahman, C. H. Kohler.

The Association's Constitution and By-Laws were changed to permit members of local or county associations to become members of the State

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Association on payment of half the regular dues when ten or more are sent in from a single organization. This, it is believed, will encourage and help the county associations and about double the present membership of the State Association.

The Pennsylvania Beekeeper, official organ of the State Association, published about four times a year, gives as much of the proceedings of the regular annual meeting as space will permit, as well as other timely topics.

Officers elected for the year: president, Edwin J. Anderson, State College; vice president, Elmer G. Cornwell, Mansfield; secretary-treasurer, A. T. Keil, Mars.

A. T. Keil,
Secretary-Treasurer.

Wakefield Appointed New County Inspector

J. Fleming Wakefield, past president of the Utah State Beekeepers' Association, has been appointed bee inspector for Utah County in co-operation with Rulon Hone, Pleasant Grove, and Arthur J. Stewart, Spanish Fork. Mr. Wakefield will serve the central district from Springville to Orem-Provo Canyon road; Mr. Hone, the district from Canyon road to the north county limits; and Mr. Stewart from Springville to the south county limits. They were appointed by the Utah county commission.

Glen Perrins,
Utah.

St. Claire Dies in Wyoming

Wm. Mosteller, of Casper, under date of February 6, sends us a notice of the death of Frank St. Claire, age 45, Worland, Wyoming, who was killed on February 5th on the road five miles south of Manderson when he was struck while fixing a tire in the road by a machine from Red Lodge, Montana, driven by W. J. Bakka. Bakka was taken into custody by Washakie County authorities and turned over to Big Horn County authorities for questioning.

Mr. St. Claire had been in beekeeping on a large scale for many years and had accumulated enough to afford a fine home in Worland. He had many friends and he will be missed throughout the state. He leaves a wife and three sons to mourn his untimely loss.

Indiana County Meetings for March

March 1, Putnam County, Greencastle, 1:30 p. m.; March 2, Montgomery County, Crawfordsville, 1:30 p. m.; March 4, in office, Indianapolis; March 5, in office, Indianapolis; March 6, Tipton County, Tipton, 1:30 p. m.; March 7, Howard County, Kokomo, 1:30 p. m.; March 8, Grant County, Marion, 1:30 p. m.; March 9, Madison County, Anderson, 1:30 p. m.; March 11, Vermillion County, Rockport, 10:00 a. m.; March 11,

Vermillion County, Clinton, 2:00 p. m.; March 12, Vigo County, Terre Haute, 2:30 p. m.; March 13, Sullivan County, Sullivan, 2:00 p. m.; March 14, Knox County, Bicknell, 2:00 p. m.; March 15, Greene County, Bloomfield, 10:00 a. m.; March 15, Greene County, Linton, 2:00 p. m.; March 16, Clay County, Brazil, 1:30 p. m.; March 18, Daviess County, Washington, 1:30 p. m.; March 19, Pike County, Petersburg, 2:00 p. m.; March 20, Gibson County, Princeton, 2:00 p. m.; March 21, Posey County, Mt. Vernon, 2:00 p. m.; March 22, Warrick County, Boonville, 2:00 p. m.; March 23, Vanderburg County, Evansville, 2:00 p. m.; March 25, Spencer County, Rockport, 2:00 p. m.; March 26, Orange County, Orleans, 2:00 p. m.; March 27, Lawrence County, Bedford, 2:00 p. m.; March 28, Monroe County, Bloomington, 2:00 p. m.; March 29, Owen County, Spencer, 10:00 a. m.; March 29, Morgan County, Martinsville, 2:00 p. m.; March 30, Johnson County, Franklin, 1:30 p. m.

Massachusetts Convention

The first meeting of the Massachusetts Federation of Beekeepers' Associations was held in Worcester on January 10th. The meeting was called to perfect the organization, adopt a Constitution and elect officers. The officers for two years are: President, Mr. George A. Meigs, Danvers, Mass., of the Essex County Agricultural School; vice president, Mr. John Van dePoele, Abington, Mass., deputy state inspector of apiaries; secretary-treasurer, Mr. Walter M. Copeland, South Lincoln.

The affiliated associations are Middlesex County Beekeepers' Association and the Eastern Massachusetts Beekeepers' Association. There are several associations which will affiliate, among them the Worcester County Beekeepers' Association, Hampshire and Hampden Beekeepers' Association, Franklin County Beekeepers' Association, Plymouth County Beekeepers' Association, Massachusetts Society of Beekeepers and the Northern Essex County Beekeepers' Association.

This Federation is the outgrowth of the efforts of Prof. C. R. Kellogg of the Massachusetts State College who has willingly given his time and efforts also to bring the Middlesex County Association into reality and help the members of that Association develop the plans for the Federation. It is with regret that we learn of the intended departure of Prof. Kellogg to China for a few years of work. Having spent ten years in China already, he will find his place again and once more talk Chinese to bees and bees to the Chinese.

The principal speaker at the January meeting was Jas. I. Hambleton, Sr. Apiculturist, U. S. D. A., who gave the members valuable information on experiments with foulbrood

cultures to determine liability of infection. He also described the work done at the various field stations including the one at Laramie, Wyoming; Baton Rouge, Louisiana and the federal office in Maryland. His suggestions to the members were very valuable. Other speakers were Prof. Kellogg and Julius Kroeck, Market Investigator of the Massachusetts Department of Agriculture, who read a paper on "Honey Standards and the New England Label" in which he explained what the New England label meant when attached to containers of Massachusetts honey. He explained how the inspector could trace back from the number on the label to the beekeeper who graded and packed the honey.

The Federation plans to help the beekeepers of the state in local association membership and through the local association to make beekeeping more profitable by instruction at meetings and demonstrations at Field Days.

The first step in this work was the issuance of a leaflet giving a report of the last summer meeting at Massachusetts State College, an outline of the Scope and Activities of the Federation, pointed paragraphs on organization by Prof. James E. Rice and the American Bee Journal, and a complete draft of the Constitution and By-Laws of the Federation which was invaluable to each one present.

Two directors from each local association make up the Board of Directors of the Federation and these directors will meet the latter part of January.

W. M. Copeland, Sec.-Treas.,
Mass. Federation of Bee. Assn.

Officers of Southern Conference 1935

George Bohne, president; G. G. Puett, secretary-treasurer. The next meeting place is Nashville, Tennessee, probably in the early fall. It is to be hoped that American Honey Institute and Honey Producers' League will meet with the Southern Conference as was done this year at Valdosta.

Thomas Atchison,
Apiary Inspector,
Alabama.

San Bernardino Association Proposes Orange Honey Prices

At a business meeting held on February 2, the San Bernardino County Honey Producers' Association adopted the following resolutions:

Whereas, the price of orange honey has been below the cost of production during the past four years and the present supply of available honey is below that usually existing, and

Whereas, the benefit of higher prices can only be secured through a concerted effort by the producers to influence the distribution and sale by

Successor
to the late
JOHN M. DAVIS

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Our Motto: Utility, Beauty and Satisfaction to the Buyer

We ship only young, vigorous, laying queens, the best that experience and careful selection can produce. We operate a chain of apiaries from Tennessee north. We rear the queens for our own northern apiaries and we guarantee them to please you.

We use no baby nuclei. All queens are reared in standard frame, large, strong nuclei, two nuclei to a ten-frame hive. Our nuclei are honey getters. Our service is prompt or your money back.

Regular stock—75c ea. Nov. 1 to May 31—50c ea. June 1 to Oct. 31.
Select Tested—\$2.50 ea. Nov. 1 to May 31—\$2.00 ea. June 1 to Oct. 31.

Select tested queens for breeders by special arrangement.

Queens for export will be carefully packed in long distance cages but safe delivery is guaranteed only in North America.

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Untested Queens	\$.75 each, any number
2-Pound Package of Bees with Queen	2.45 each, any number
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Each additional pound of bees, 70c.	

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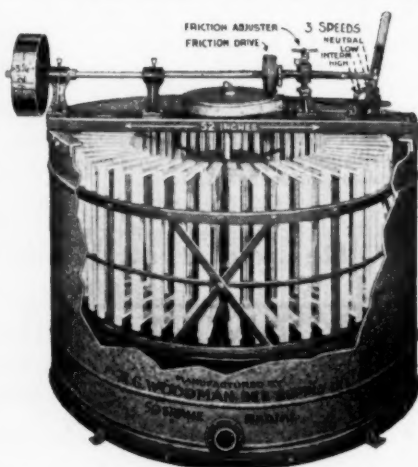
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withholding their product from the market until satisfactory prices are offered; therefore, be it

Resolved, that we, the orange honey producers of the San Bernardino County Honey Producers' Association hereby agree and pledge ourselves to hold our 1935 crop of orange honey for seven cents per pound f.o.b. Los Angeles; and be it further

Resolved, that we will not contract our 1935 crop for less than the above price.

This is an attempt to maintain the premium for this fine honey which it has always enjoyed. It is estimated that there is at least a 25 per cent loss of bees in California (in southern California much higher) because of a total failure of honey crops from many parts of the state brought about by the excessive hot spell last July which resulted in bees going into winter quarters in poor shape and coming out in the spring in even worse condition. It is also further estimated that only about half of the bees which did survive will be in condition to produce orange honey.

Reported by

Mrs. Herbert M. Yates,
Secretary of the San Bernardino Co. Honey Prod. Assn.

DEATHS

**Eastern Massachusetts Loses
C. H. Howard**

C. H. Howard a member of the eastern Massachusetts Society of Beekeepers died October 18th at the age of 96. He kept bees continuously for seventy years and was keenly interested in beekeeping since he started in business in 1895.

Howard Potter, Jr. Secretary,
Eastern Mass. Beekeepers' Society.

Mrs. J. F. Diemer Dies

Mrs. Hannah J. Diemer, wife of J. F. Diemer, queen breeder of Liberty, Missouri, died unexpectedly on December 6, after a short illness; funeral December 9.

Mrs. Diemer was 78 years old; born in Wayne County, Illinois, in 1856. She and Mr. Diemer observed their 55th wedding anniversary last spring.

Our sympathy goes out to Mr. Diemer in his bereavement. In addition to Mr. Diemer, she is survived by Guy Diemer, in business with Mr. Diemer at Liberty; Miss Margaret Diemer, of Hastings, Nebraska; and Mrs. Chas. A. Brand, of Oakland, California.

Charles Becker Dies in Yakima

Charles Becker, for many years regarded as the largest beekeeper in the Yakima Valley, died recently in his home at Outlook, at 60 years of age. He had lived in the valley 25 years, engaging in honey production most of that time. I. L. Neill, Washington.

Crop and Market Report

Compiled by M. G. Dadant.

For our March issue, we asked reporters to answer the following questions:

1. How are bees wintering so far?
2. Moisture and honey plant conditions?
3. How does honey on hand compare to carryover of a year ago?
4. How does demand now compare to November 1934?

Wintering

In practically all instances all over the country, beekeepers reported that bees were wintering in a satisfactory manner. The only exceptions were the possibility of the long cold spell in the extreme northern areas being hard on the bees on account of being confined to the hives for such a long period.

Other difficulties with wintering were along the Atlantic seaboard where the quick changes from warm to cold weather had induced brood rearing and then killed some of the brood. However, there is ample time to overcome this by new breeding. Along the Pacific seacoast particularly in California and in British Columbia, the bees seem to have been getting short of stores and unless carefully fed, it may have been detrimental to continuous brood rearing.

Moisture and Plants

Generally speaking, moisture has been satisfactory and honey plants are in fairly good condition. Those sections which offer the best opportunities are the northeast sections, the Atlantic coastal region, the Great Lakes states and Arizona and California extending up the Pacific coast and including Nevada. In California, particularly, the rainfall has been greater than for several years in the past and indications are that honey plants should be in the finest condition than they have ever been. The only difficulty is that in many instances, bees are not ready to gather the first crop from orange which is quite early and for that reason, the crop may suffer somewhat.

Although there has been some moisture in the north central states, it is only a surface moisture and the subsoil is not yet as wet as it should be. Many more clover plants have undoubtedly died from the last year's drought than was anticipated. The drought still continues in the Dakotas and western Minnesota and although there have been very heavy snows in the intermountain territory, these are not sufficient to guarantee moisture for the coming season. Moisture is still very deficient in eastern Colorado and in Nebraska, Kansas and eastern Texas extending into New Mexico.

All in all, we would say that conditions are not more than normal and perhaps sub-normal except for northeast sections, the Great Lakes states where there have been heavy snows, along the Pacific seaboard, and especially California, which for the first time in many years promises a big crop.

Snowfall has been sufficient in the Canadian provinces and indications there are that the clovers should come through in a satisfactory manner.

Over the entire sweet clover area, just what the effects will be of the drought last year remains to be seen

although undoubtedly many sections will suffer. It does appear, however, as though the sweet clover has come out on account of the desirable fall rains.

Honey on Hand

In practically all instances, there is less honey on hand than there was at this time a year ago. As a matter of fact, perhaps not 50 per cent as much the country over. Many states are reporting being completely out of honey and beekeepers buying wherever they can to keep their trade supplied.

What honey there is left on hand, is either in the hands of the packers who bought early in order to secure a desirable supply for the season or else in the hands of big producers who are holding for their price. We learn of a number of producers in the Central West and intermountain territory who are asking in the neighborhood of 7 cents per pound for white extracted honey, in carload lots.

One California honey producer reports that for the first time in several years he has disposed of his last car of honey and is completely cleaned out which gives an idea of the cleanup on honey along the Pacific coast. Washington, however, is reporting considerable honey yet left on hand and perhaps more than a year ago as is Manitoba. The other Canadian provinces reporting less than in 1933.

Demand

We purposely asked in our inquiry as to whether the demand for February was as good as it had been in November, 1934. November usually is a heavy month for demand. The replies were about half and half, half of them reporting less demand than in 1934 and half even greater demand than in the months which are usually our best selling months.

It would appear that the demand has picked up quite considerably from January and is now above what it normally is in February. We learn from some of the large producers that the inquiries for carload lots is again quickening although some parties report difficulty in disposing of carload lots, however, at their price.

Summary

All in all, we would judge that bees are coming through the winter so far in perhaps above average conditions. Honey plant conditions in moisture would seem to be below average, particularly in the white clover producing areas excepting the eastern and northeastern states. The effect of the drought is still noticeable in those western areas which were situated in the extreme drought last year. The freezes in Florida have almost destroyed the spring crop for beekeepers there and Georgia for about the fifth season is complaining of drought.

From earliest indications, we cannot see where the honey crop can be anything above normal unless heavy rains and snows come from now on.

Undoubtedly honey will be cleaned up the country over although there may have to be some special prices on the part of some beekeepers who are holding for a fancy price.

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Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

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Eugene Gordon, North Platte, Nebraska.

MOUNTAIN GRAY CAUCASIAN Bees and Queens. Get in touch with us for your 1935 needs. Bolling Bee Co., Bolling, Ala.

THREE-BANDED Italian bees and queens, that are real honey gatherers and gentle to work with, for 1935, at code prices. Satisfaction guaranteed or your money returned. Alamance Bee Company, George Elmo Curtis, Mgr., Graham, North Carolina.

CAUCASIAN QUEENS from my northern hardy, tried stock, ready May 1. Limited number. Order early. Code prices. Bird's Apiaries, Odebolt, Iowa.

ISLAND BRED dark Italian queens. \$5 each. Choicest, \$10. Send check or money order. First write Bee Culture, Washington, D.C. for permit to import queens. See ad in Dec. A.B.J. E. L. Sechrist, Papeete, Tahiti.

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PACKAGE BEES, Nucleus and Queens. Three-band Italians. Gray Caucasian. Priced to save you money. Parcel Post or Express. Crenshaw County Apiaries, Rutledge, Ala.

BRIGHT THREE-BANDED Italian Bees and Queens for early shipment. In our many years of carefully selecting and breeding, from the best each year, our breeding career has always been to breed bigger queens that produce bigger, better bees, with all good qualities as nearly perfect as possible. Our strain will absolutely please you or we will refund your money. Write us for best prices. Our friendly, courteous, satisfactory service awaits you. Central Louisiana Apiaries, Bordelon and Caldwell, Marksville, Louisiana.

QUEENS, PACKAGE BEES. Queens 75c. Two pound bees with queen, \$2.45; three pound, \$3.15. 15% discount to dealers. Will trade for foundation, wax, excluders, frames, etc. Blue Bonnet Apiaries, Rt. 1, Box 33, Mercedes, Texas.

BEST MOUNTAIN GRAY Caucasian Bees and Queens. Select queens 75c each. 2-pound package with queen, \$2.45; 3-pound package with queen, \$3.15. Full weight. Safe arrival guaranteed. P. B. Skinner Bee Co., Greenville, Ala.

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PACKAGE BEES AND QUEENS ready April 1st. Italians or Caucasian. Either strain will increase your honey crop. Each are fast winning favorites. Write us. Honey Bee Apiaries, Sandwich, Ill.

PACKAGE BEES AND QUEENS, Italians—Caucasians. Quality and personal service at marketing agreement prices. Weaver Apiaries, Navasota, Texas.

GOLDEN—These queens are pure Italians bred from the three-banded by selecting the yellow and line breeding for honey as well as color. They are just extra yellow Italians, good honey gatherers and very gentle to handle. Tested \$1.50. Select tested \$2.00. Untested about May, 75c. D. T. Gaster, Rt. 2, Randleman, N. C.

HONEY FOR SALE

FOR SALE—Northern white extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY FOR SALE—Keep your customers supplied with honey. We can furnish white and light amber honey at attractive prices. Packed in 60-lb., 10-lb. or 5-lb. tins. Dadant & Sons, Hamilton, Ill.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

CHOICE Michigan Clover Honey. New 60's. David Running, Fillion, Michigan.

WHITE clover extracted honey. Write for prices and sample. Kalona Honey Co., Kalona, Iowa.

CHOICE WHITE CLOVER HONEY in 60-lb. cans. J. F. Moore, Tiffin, Ohio.

450 CASES clover basswood comb honey. Chas. Guhl, R. 7, Napoleon, Ohio.

FOR SALE—Well ripened clover honey, car lot or local shipments. Will be pleased to submit sample. THE COLORADO HONEY PRODUCERS' ASSN., 1424 Market St., Denver, Colorado.

FINE QUALITY Mangrove honey in new sixties. Sample 6c. Peter W. Sowinski, Fort Pierce, Florida.

EXTRA WHITE clover-basswood honey in new 60-lb. cans, 7c per lb.; 4 cases or over, 6½c. A. A. French & Son, Theresa, N. Y.

CHOICE CLOVER HONEY. Case or car. Edw. Klein, Gurnee, Ill.

BLACK HILLS—White extracted honey in 60-lb. cans. Samples 25c. Ernest W. Fox, Fruitdale, S. Dakota.

EXTRACTED AND COMB white clover honey. Sample 10c. F. W. Summerfield, Grand Rapids, Ohio.

NUMBER ONE COMB HONEY, quantity lots, two-fifty per case. N. B. Querin & Son, Bellevue, Ohio.

WE OFFER White and Buckwheat extracted honey in pails or 60-lb. cans; also comb honey. Reasonable prices. A. I. Root Co., 224 West Huron St., Chicago, Ill.

FOR SALE—300 cases No. 1 to fancy clover comb honey, carrier lots \$2.50 per case; cellophanned, \$2.75. Amber extracted, 6½c. H. G. Quirin, Bellevue, Ohio.

WHITE CLOVER-BASSWOOD extracted honey, 7c. A. J. Wilson, Hammond, N. Y.

HOWDY'S HONEY—Michigan white, clover, extracted in new sixties. Howard Potter, Ithaca, Michigan. Personal, 1200 Mass. Ave., Cambridge, Mass.

FOR SALE—A large car white sweet clover alfalfa honey. Geo. Seastream, Moorhead, Minn.

HONEY AND BEESWAX WANTED

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—HONEY and BEESWAX. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. CALIFORNIA HONEY COMPANY, Hamilton & Company, Agents, 108 W. Sixth Street, Los Angeles, California.

WANTED—Extracted Honey. Send sample and price delivered to T. W. Burleson & Son, Waxahachie, Texas.

WANTED—Light and amber honey. Riverside Apiaries, Russell, Illinois.

FOR SALE

FOR SALE—500 colonies bees and equipment in A-1 condition. W. M. Peacock, Mapleton, Iowa.

350 COLONIES bees with best and complete equipment for honey or package bees at a sacrifice. L. L. Ferebee, Pineland, S. C.

BARGAIN LIST—Smokers, veils, box seats, section presses, excluder sheets, frames and extractors. Write G. B. Lewis Company, Watertown, Wisconsin.

PINK (Coral) VINE, perennial; wonderful honey plant. Beautiful, ornamental. Blooms early spring until frost. Seed \$1.00 per ounce; plants 50c each. Dr. A. S. Holley, 403 Stratford, Houston, Texas.

FOR SALE—Alpha Sweet Clover Seed. 50c a pound plus postage. Clement Dahlheimer, Anoka, Minn.

FOR SALE—900 colonies of bees, 2 extractors and equipment, A1 condition. Mrs. Rosa F. St. Clair, Worland, Wyoming.

BLACK LOCUST TREES—Bloom after fruit trees and before clover. Plant a hundred to insure heavy brooding just before clover starts. Fine windbreaks or street plantings. 7,000 trees. Express pd., per 100, 4 ft., \$8.00; 3 ft., \$6.00; 2 ft., \$5.00. Order at least 50 of a size. Conrad G. Kruse, Loganville, Wis.

FOR SALE—100 Colonies Italians, 10-frame extracting equipment. Excellent condition. Sweet clover section Minnesota. Write Minn., care of American Bee Journal.

500 STANDS BEES, new equipment; health certificate. Take cash, honey, or trade. F. E. L., care of American Bee Journal.

WANTED

WANTED—50 to 500 colonies bees. Edw. Klein, Gurnee, Ill.

YOUNG MAN wants job with beekeeper; some experience, wants more. Carl Hansen, Popejoy, Iowa.

WANTED—A large sized extracting outfit. H. G. Quirin, Bellevue, Ohio.

WANTED—Employment by experienced apiarist. Seasonal employment anywhere. Monthly wage preferred. Write stating salary and length of season. Expert uncapper, 1½ to 2 tons daily. Twenty years' experience. Address Lee M. Chrisman, 4842 Tulare Ave., Fresno, California.

WILL TRADE large new radial extractor for package bees. La Verne Roose, Sac City, Iowa.

HELP WANTED, experienced. Good wages to right man. M. E. Ballard, Roxbury, N. Y.

WANTED—Clean active young man for apiary work. Give age, weight, height and experience if any, in first letter. Also wages wanted. Board and Room furnished. No smokers. David Running, Fillion, Mich.

WANT TO COMMUNICATE with small bee-keeper that wants good location here, chance to build up quick. Box 3, in care of American Bee Journal, Hamilton, Ill.

SUPPLIES

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

VIKLA'S SWARM CONVEYOR traps the swarms automatically. Literature free. Vikla Mfg. Co., Lonsdale, Minn.

PORTER BEE ESCAPES save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, \$1.00; two years, \$1.50. Sample, 3c stamp. The Beekeepers Item, San Antonio, Texas.

SAVE QUEENS. Safin cages now 15c. Ten for \$1.00. Allen Latham, Norwichtown, Connecticut.

FOR SALE—Queen mailing cages. Material, workmanship and service all guaranteed. Write for quantity prices. Hamilton Bee Supply Co., Almont, Mich.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

QUALITY BEE SUPPLIES. Prompt shipment. Reasonable prices. We take honey and beeswax in trade for bee supplies. The Hubbard Apiaries, Onsted, Mich.

WILL WORK YOUR WAX into medium brood foundation for 15 cents per pound, thin super, 20c. Medium brood foundation ten pounds \$4.00. Fred Peterson, Alden, Iowa.

WIRED FRAMES packed in flat. Write for catalogue to A. E. Wolkow Co., 384 State St., Hartford, Wis.

MISCELLANEOUS

SAVE ON PRINTING. Write for prices. Quality Printing Service, Covington, Ky.

PLANS FOR POULTRY HOUSES — All styles; 150 illustrations. Tells you the type to build for your particular locality. Secret of getting winter eggs, and, copy of "Inland." Send 25c. Inland Poultry Journal, Spencer, Indiana.

GREAT OPPORTUNITY, buy profitable apiary business in Canada at very low price. Address Box S.K., American Bee Journal.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

BOOK BARGAIN—Very slightly damaged copies of Beekeeping in the South by Kenneth Hawkins, cloth bound, published to sell at \$1.25, price postpaid only 29 cents. American Bee Journal, Hamilton, Ill.

Slumgum As a Mulch

Slumgum, or refuse from wax rendering, makes an excellent mulch for the garden. If the wax is rendered properly, the remainder is animal matter with probably some fertilizing value. It serves excellently, at any rate, to retain the moisture in the soil.

S. F. Haxton,
Pennsylvania.

Bee Venom Therapy Important New Book

At last the question of the medical value of bee stings is taken out of the realm of discussion by beekeepers and properly considered by competent authority. A new book has just been issued entitled, "Bee Venom Therapy" by Dr. Bodog F. Beck. It treats the subject in an exhaustive manner and places in the hands of the medical fraternity all information available to date. The book is published by the Appleton-Century Company of New York and sells for \$5.

The book is arranged in two parts. Part one gives a medical history of the bee and its venom, a chapter on animal venoms in general and extended accounts of the effects of bee sting poison. There is a chapter also on treatment of bee stings, since stings quite often prove serious to certain persons.

Part two of the book deals with rheumatism and the use of bee poison for its cure. It has long been noticed that persons with rheumatism were sometimes greatly improved following the accidental stinging by the bees. So many times were such cases observed that it came to be common for rheumatic persons to purposely cause themselves to be stung. Doctor Beck has made a most exhaustive study of the whole subject and has examined the reports of cases from all parts of the world. In the book he reviews hundreds of successful cases and states that the remedy has been used by hundreds of physicians all over Europe, "and not a single instance has been reported where it has done any harm or produced injurious effects."

It is fortunate, indeed, that this comprehensive review has appeared and that authoritative information is now available.

Wintering Bees in Southern Arizona

There is such a great contrast between northern wintering conditions and our methods here in southern Arizona, that it might be of interest to northern beekeepers to know how it is done here. In this mild climate it is not necessary to make any special preparations for their protection during the winter, other than narrowing the entrance to keep out the mice and to help conserve warmth. Our most salable honey comes from the mesquite and catclaw trees, and the flow usually lasts from the first part of May until the first part of July, and has yielded us over a seven year period an average of about one hundred pounds per colony. After the first of July the honey is of an inferior quality, and we make it a practice to leave at least thirty

pounds of this honey on the hive for winter stores, which is sufficient to carry them from the first of November, when the flow stops, until February fifteenth, when the first ground flowers bloom.

The bees generally kill the drones and stop brood rearing about the first of December. The temperature rarely falls below fifteen degrees, and that for only a few hours at a time. They fly practically every day during the winter, and carry about half of the working force. This accounts for the large amount of honey consumed. It is possible to inspect them almost any day during the winter.

The honey is in the top two supers and the queen starts laying there during the latter part of January, making it necessary to move her and all the brood to the bottom two supers about the tenth of March. Pollen is furnished by the cottonwood and ash trees during February and March.

We leave all the equipment on the hives the year around, averaging three and a half to four stories, and have never had any damage from the wax moth, and have rarely lost a colony.

Mrs. Tom Neavitt,
Arizona.

Prize Winners, Missouri State Fair

Honey Vinegar

3 lbs. comb honey
Add 1 gallon rain water

Let stand about three weeks in a warm place. When fermented, skim and bottle.

Honey Doughnuts

½ cup honey
1 egg
2½ cups flour
½ teaspoon nutmeg
1/3 cup sugar
1 tablespoon shortening

Don't roll honey doughnuts in sugar.

Mrs. Geo. Landes,
Sedalia.

Honey Muffins

4 tablespoons shortening
4 tablespoons honey
1 egg beaten lightly
¾ cup sour milk
2 teaspoons baking powder
1 teaspoon soda
½ teaspoon salt
1¼ cups white flour

For darker muffins use graham flour and ¾ cup white flour. Beat thoroughly, bake in muffin tins in hot oven 20 minutes.

Mrs. E. H. Hildebrandt,
Sedalia.

RED RIVER VALLEY APIARIES

will furnish you **THREE-BANDED ITALIAN BEES AND QUEENS**

None better. Queens that lay the eggs, bees that produce the honey. Every package backed with a guarantee that counts. Satisfied customers in every state and Canada. There is a reason. No order too large, none too small. Give me your requirements. Code prices.

J. G. BRUNSON, CHICOTA, TEXAS



DON'T PAY MORE THAN KELLEY'S FACTORY PRICES ON BEE SUPPLIES

COMPLETE LINE OF SOFT WHITE PINE SUPPLIES.

THE WALTER T. KELLEY CO.
PADUCAH, KENTUCKY



JENSEN'S

PURE THREE BANDED ITALIAN

Combless Packages -- Orchard Packages -- Queens

Our advertising may seem modest beside others you read, but we can deliver the goods nevertheless. No orders too large or too small. With a branch queen business nearly 200 miles farther south, we can assure you even better early queens than formerly, although with our double-walled cell building hives we have seldom had any difficulty here. In order to save you express charges, shipments will go forward from here as in the past.

Boost your own business! HOW? On orders of \$25.00 or more we will allow 1% to be deducted and sent to the American Honey Institute, Madison, Wis. or sent directly to us with your order, we will forward TO YOUR CREDIT.

We implore you to order early. Delay is to invite disappointment. Advance booking helps us to plan our work and increases our efficiency. For **QUALITY** and **SERVICE** we are not surpassed by anyone. Our equipment and methods are based on our 21 years' experience, and we are many years older as actual shippers of the state, than others claiming this distinction.

We Guarantee

Purely mated and prolific queens. Full weight of **LIVE BEES**. (Not a single claim of Bad Order last year.) Prompt shipments. Low express rates, and entire satisfaction.

PRICES FOR APRIL AND MAY DELIVERIES

Two-Pound Packages with Select 1935 Queens	\$2.45 each
Three-Pound Packages with Select 1935 Queens	3.15 each
Four-Pound Orchard Packages with Queens	4.00 each
Five-Pound Orchard Packages with Queens	4.75 each
Queens, Select Untested, Postpaid	.75 each

15% Discount to recognized dealers only.

JENSEN'S APIARIES, Crawford, Mississippi, U. S. A.

Package Bees

QUALITY—RELIABILITY
LOWEST POSSIBLE PRICES
WRITE TODAY!
KOEHNEN APIARIES, Glenn, Calif.

Queens

Honor Roll

AMERICAN HONEY INSTITUTE



Memberships listed here were received during the period from April 1, 1934, to December 31, 1934.

EXPLANATIONS ON THE HONOR ROLL—

* indicates those members received through the Free Queen Offer Made by Stover Apiaries, Mayhew, Mississippi.

† indicates those members realized through the Free Queen Offer of S. J. Head, B. & B. Apiaries, Atchafalaya, Louisiana.

Illinois (Continued from page 95, February)

*Page, Roy, McHenry	1.00
*Schultz, J. C., Chicago, 2045 W. Madison St.	1.00
*Strope, J. Floyd, Pekin, 301 Carolyn St.	1.00
*Bigler, George, Clarendon Hills, 21 Ogden Ave.	1.00
Evans, Richard K., Hoopeston	1.00
Retzinger, Leo, Northbrook	1.00
Foot, Harvey, Green Valley	1.00
Claussen, S. S., Oregon	1.00
LaRosh, Robert, Pekin	1.00
Bartruff, Adolph, Pekin	1.00
Belloth, Fred F., Mt. Pulaski	1.00
Lohnes, Walter Scott, Pekin	1.00
Tyler, S. A., San Jose	1.00
Rankin, R. E., Payson	1.00
Skinner, John, Albion	1.00
Smith's Apiary, Greenville	1.00
*Oltmann, Oltmanns, Baileyville	1.00
Baeb, John, Chicago, 300 E. 136th St.	1.00
Kennett, O. W., Ohlman	1.00
Clough, Arthur, Donnellson	1.00
Greenwood, Donald W., Wheaton	1.00
Donnell, Carson, Donnellson	1.00
Krebs, Phillip, Marissa	1.00
*Doermann, A. W. T., Blue Island, 242 Western Ave.	1.00
Jonkman & Oosting, Evergreen Park	1.00
Weed, Geo. H., Lanark	1.00
Whiting, Ivan, Roscoe	1.00
*Woody, E. C., Chicago, 1314 W. 31st St.	1.00
Wicklein, F. A., Percy	1.00
*Burdilaukus, Joe, Pana, 505 N. Walnut	1.00
*Hassler, Pearl, Princeton, Rt. 6	1.00
*Reid, George H., Carlinville	1.00
McCormick, E. J., Chicago, 6810 Winchester	1.00
Young, W. C., Chicago, 8514 Elizabeth	1.00
Bodenschatz, Adam, Lemont, 610 Porter	1.00
Rector, L. W., Blue Island, 12944 S. California	.50
Olson, C. A., LaGrange, Edgeworth & 47th	.50
Gober, R. M., Oregon	.50
Total	\$124.43

Indiana

Sherfick, Thos. D., Shoals	\$ 6.00
Miller, E. S., Valparaiso	5.00
*Backstahler, Rev. W. J. G., Evansville	5.00
Vigo Co. Bee Ass'n, Wm. Pogue, Sec., Terre Haute	5.00
*Weber, Wm. M., Huntington, Rt. 2	3.00
*Brenneman, Moody, Berne	3.00
*Stewart, L. R., Newport	2.00
*Lewellen, Jesse N., Newcastle, 630 Goodman	2.00
Johnson, T. C., Logansport	2.00
*Bridges, R. R., Indianapolis, 62 Sherman Drive N.	1.00
Alcorn, P. G., Needham, Rt. 1	1.00
Routny, James, Sumava Resorts	1.00
*Thomas, A. E., Indianapolis, 215 N. Alabama	1.00
*Skiles, Andrew, Anderson, Rt. 8	1.00
Kemper, Lon, Greentown	1.00
Hosier Honey Apiaries, Marion	1.00
Goodwin, Homer, Emison	1.00
Catalpa Grove Apiaries, Galveston, Rt. 1	1.00
*Henry, W. B., Winamac, 206 N. Front St.	1.00
*Campbell, Wayne, Carlisle	1.00
*Macdonald, J. Lake, Marion, Box 207, Rt. 3	1.00
*Mays, W. H., Goshen	1.00
*Stewart, Dr. Clarke E., Vincennes, 701 Buntin	1.00
*Dodge, Clint C., Charlestown	1.00
*Hook, Lewis C., Albany	1.00
*Brown, J. E., Kokomo	1.00
*Smuts, John M., Zanesville	1.00
*Brenneman, Fred, Berne	1.00
*Overman, J. F., Wilkinson	1.00
Hodson, Gerald L., Amboy	1.00
Starkey, James E., Indianapolis, State Library Bldg.	1.00
Stubbs, Leslie M., Noblesville, Rt. 3	.25
Total	\$55.25

Iowa

Lyle, Newman, Sheldon	\$35.00
Mann, W. P., Thurman	10.00
*Schlenker, John W., Des Moines, Rt. 4	5.00
Cole, E. M., Audubon	5.00
Peterson, Fred, Alden	5.00
Cook, R. E., Renwick	4.00
Haag, Carl, Alton	4.00
Conner, John H., Ames	3.60
Polhemus, Geo. N., Ames	3.00
Pfeffer, F. D., Hampton	2.50
Paddock, F. B., Ames	2.00
*Ewell, E. W., Des Moines, 1020 65th St.	2.00
*Smith, M. D., Preston, Rt. 1, Box 24	2.00
Stoughton, J. F., Cherokee	1.00
Soder, A. R., Hartford	1.00
Soder, Alfred, Stratford	1.00
Harnack, Wilbur, McGregor	1.00
*Coulter, Forest, Goldfield	1.00
*Caldwell, J. J., Morning Sun	1.00
*Robinson, Earl C., Oelwein	1.00
*Erickson, Carl, Nora Springs	1.00
Johnson, Edwin O., Exline	1.00
Herman, Jos., Manchester	1.00
Massure, Harry, Redfield	.80
Total	\$93.90

Kansas

Overbaugh, Clifford, Frankfort	\$ 4.25
Humphrey, John N., Sabetha	2.50
*Packer, S. F., Wichita, 236 S. Green	1.00
*Hubert, Elias, Atchison	1.00
*Yost, P. E., Hesston	1.00
*Kamping, Nada Helen, Elsmore	1.00
*Edson, W. H., Olathe, 522 S. Cherry	1.00
Hill Grove Farm (Lloyd Decker), Goddard	1.00
Nelson, F. H., Haysville	.25
Total	\$13.00

Kentucky

Kentucky State Bee Ass'n, W. O. Price, Lexington	\$ 5.00
Gooch, L. E., Nicholasville	1.00
*Saylor, Geo. W., Harlan	1.00
*Nicholson, E., Corbin, 810 Masters St.	1.00
*Todd, Hugh C., Richmond	1.00
*Harrison, D., Shelbyville	1.00
*Davis, Marshall, Elk Horn	1.00
Nobbe, E. H., Anchorage, Altawood Ct.	1.00
Total	\$12.00

Louisiana

La. Southern Bee Farm, Baton Rouge	\$20.00
Red Stick Apiaries, Montegut	10.00
Whitcomb, Warren, Baton Rouge	10.00
Garon Bee Co., Donaldsonville	7.00
Cloverland Apiaries, Montegut	5.00
Stevenson, M., Gretna	5.00
Crowville Apiaries, Winnaboro, Rt. 1	5.00
Eells Honey & Bee Co., Morgan City, Box 105 Star Rt.	5.00
Anderson, W. E., Baton Rouge	2.00
McKnight, C. T., Shreveport	1.00
Overby, O. Z., Leonville	1.00
Bessonet, E. C., Donaldsonville	1.00
*Mansford Plantation, Tallulah	1.00
*Burns, E. D., Sr., Ponchatoula	1.00
*Kimball, L. F., Hammond	1.00
Maudlin, G. L., Good Hope, Box 26	1.00
*Saxon, Presley, Water Proof, Box 122	1.00
Total	\$77.00

Maryland

Maryland State Bee Ass'n, Ernest Cory, College Park	\$5.00
*Johnson, A. H., Centerville	3.00
*Reddick, Clarence W., Walkersville	1.00
Total	\$9.00

Massachusetts

Arms, Richard, Old Deerfield	\$ 5.00
*Hobbs, Arthur M., Haverhill, 2 Water St.	1.00
Metz, Adolph, Brookline, 341 St. Paul St.	1.00
Lyman, W. E., Easthampton, Rt. 1	1.00
Kellogg, C. R., Amherst	1.00
Klempa, Hugh I., Ludlow	1.00
Twing, Edward A., Monterey	1.00
Laughton, A. A., Athol	1.00
Total	\$12.00

Michigan

Running, David, Filion	\$ 30.00
Blake, Wm. G., Port Huron, 1208 Rawlins	15.00
Dillon, M. N., Fruit Ridge	15.00
Doane, C. D., Otisville	10.00
Reinhold Bee Farm, Flat Rock	10.00
Martin, Wm. J., Crosswell	10.00
Hilbert, James, Traverse City	10.00
Meyers, M. S., Northville	8.00
Markham, Floyd, Ypsilanti	7.00
McCall, John S., Tecumseh	6.00
Roth, O. H., Reese, Rt. 2	5.00
Kocsis, E., Detroit, Rt. 2, Box 4593	5.00
Wilde, F. B., Wayland	5.00
Blakely, Arthur, Detroit, 17379 Greenfield Rd.	5.00
Sanilac Co. Beekeepers' Assn.	5.00
Metz, C., Otisville	4.00
Janescheck, Frank, Middleville	3.90
*Beckwith, Herbert, Milford	3.00
Clark, O. L., St. Clair	2.50
Hufford, P. W., Petoskey	2.50
Goetz, Bruno, Minden City	2.50
Delamarter, E. J., Cheboygan	2.50
Kastel, F. X., Ottawa Lake	2.00
Evans, L. E., Onsted	2.00
Wester, John A., Cheboygan	2.00
Rattray, Arthur, Almont	2.00
Tuckerman, C. O., Beaverton	2.00
Simpson, DeRoy, Flushing, 521 Chamberlain	2.00
Hodges, Wm., Marshall, 611 River St.	2.00
Newman H. C., Charlevoix	2.00
Schroeder, Fred W., Detroit, 6606 Allendale Ave.	2.00
Dumon, John E., Big Rapids	2.00
*Christ, A. C., Belleville	2.00
Hart, Ray, Chelsea	1.00
Howe, Elmer D., Azalia	1.00
King, Geo., Monroe, Rt. 1	1.00
Dickson, J. G., Ann Arbor, Rt. 6	1.00
Matson, A., Dearborn, 21613 Donaldson	1.00
Emery, C. L., Carleton	1.00
Hartley, Thomas, Dearborn, 24500 Ann Arbor Trail	1.00
Baetz, John A., Dearborn, 6856 Appoline	1.00
Wales, Chauncey, Ypsilanti, 5760 Textile Rd.	1.00
Harvey, Fred H., Battle Creek	1.00
*Dobson, James A., Suttons Bay	1.00
*Padelford, O. E., Bellevue	1.00
*Fleming, W. H., Lake	1.00
*Wuerfel, Paul, Ann Arbor, 305 Miller Ave.	1.00
*Wright, Alvin, Pinconning	1.00
*Clapp, C. A., Battle Creek, 299 Cherry St.	1.00
*Dean, William O., Nashville	1.00
*Korn, G. J., Berrien Springs	1.00
*Kloepfer, Don, Grand Ledge	1.00
Avery, Lewis B., Clinton	1.00
*Grawburg, Arthur M., Grand Rapids, 619 Lydia N.E.	1.00
*Cranson, Ford, Milan	1.00
*Zock, J. J., Flint, Gen'l Delivery	1.00
Wunsch, Gerald J., Ada, Box 236	1.00
*Morse, Jenner E., Saginaw, 323 1/2 Genesee	1.00
*Hicks, Jess J., Flint, 4906 Corunna Rd.	1.00
Carroll Apiaries, Central Lake	1.00
East, M. T., Traverse City	1.00
Whitney, M. C., Blanchard, Rt. 1	1.00

This Honor Roll occupies several pages. It began in February and will be continued in the April number. If your state is not included above, therefore, look for it in February, April, or later issues. If any name is mis-spelled or if any name is omitted, please write at once to either the American Bee Journal or to American Honey Institute, Madison, Wisconsin.

THIS SPACE CONTRIBUTED BY DADANT & SONS, HAMILTON, ILL.

The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

It begins to appear that there are more people interested in the persimmon tree in the Mid-West than we had supposed. F. O. Harrington, of Williamsburg, Iowa, has been cultivating them for more than 35 years and was among the first to graft them successfully. In 1900 he grafted several hundred seedling trees to the best varieties which he was able to obtain. Anyone interested in this fruit under Iowa conditions will do well to visit the Harrington persimmon orchard.

One of the best ornamentals for the northern Plains region is the Caragana or pea-tree. It is a wonderful honey producer and beekeepers living where it is generally planted are fortunate. In the vicinity of towns where pea-tree is generally used a honeyflow in May can be expected. It is a neat little tree seldom exceeding twenty feet in height. The delicate foliage starts in early spring and the abundant yellow flowers make for special attraction during the blooming period. It is hardy and well suited to the Dakotas, Nebraska and similar regions where hardiness is essential. Beekeepers will do well to assist in its spread.

An article on "stingless bees" in the January Popular Mechanics has attracted much attention. The title is very misleading since the article refers to Caucasians which are far from stingless as the editor of that magazine might discover on suitable provocation. It is too bad that so much incorrect information about bees appears in the public press.

John H. Lovell raises an interesting question as to the source of the poisonous honey of North Carolina. It has long been credited to Mountain Laurel (*Kalmia latifolia*), by some while others doubt that this plant is responsible. If this plant does yield poisonous honey it seems strange that it is not reported from widely separated points in its range from Massachusetts to Georgia.

In the January issue of Gleanings for 1875 appeared an article by a man who served as a surgeon in the Confederate army during the war between the states. He described at length the effect on the soldiers of eating laurel honey. He reported it as highly poisonous and stated that soldiers eating the honey were overpowered with it and appeared as though dead drunk. He reported several such cases in the Shenandoah Valley of Virginia.

While the doctor may have been mistaken as to the source of the honey he credited it to the laurel. I am of the opinion that this poisonous honey, whatever its source, loses much of its irritating quality after it is well ripened and this may account for the infrequent reports of ill effects from its use.

Vernon K. Gould, of Gorham, Maine, writes about a plant growing to a height of ten feet locally called bamboo which is very attractive to the bees. He describes the leaves as being as large as a small cake plate and the stem which he sends me is as thick as my thumb. It has attractive white blossoms and the bees work it heavily from about August 20 to September 9.

Lacking flowers and leaves it is impossible to determine it with certainty but one wonders if it may not be *Polygonum sachalinense* which is a native of the Sakhalin Island off the coast of eastern Asia. Coming from that north country the plant would be hardy even in Maine. The large leaves and tall growth would make an interesting hedge or screen for the border of a wild garden. Beekeepers will be interested in view of the great attraction for the bees.

In answer to last month's question as to whether vetch will yield honey on sandy soil, Fred H. May, of Meredosia, Illinois, writes that he has grown vetch for years on light sandy loam, that it produces more forage on this kind of soil than any other crop but that he seldom sees any honeybees on it. The bumblebees visit it freely, however.

The presence of the bumblebees indicates nectar and this raises a question as to why the honeybees are not likewise interested.

Forrest L. Meuret, of Wayne, Nebraska, has attempted the surprising experiment of rearing young bees from eggs without the assistance of nurse bees. It reminds me of my own attempt to rear young wasps unaided by the natural mother, as told in my book, "Our Backdoor Neighbors." I succeeded in rearing a few of the older larvae but the younger ones all died. I will watch with interest the outcome of Meuret's efforts.

J. H. Sturdevant of St. Paul, Nebraska, inquires where seed of catnip and motherwort can be secured and at what price. I do not know of any seed firms offering seeds of either. The plants are now so common that it is usually easy enough to gather what seed one might want. Perhaps there may be seed advertised which has not come to my attention. In 1902 Dr. J. L. Gandy, of Humbolt, Nebraska, attracted wide attention by his stories of catnip which he had planted for the bees. He proposed to require the tenants on his farms to plant a certain area of catnip.

F. W. Lesser, of Fayetteville, New York, very kindly answers last month's question about buckwheat on heavy soils. He states that buckwheat yields but little on heavy limestone soils in that state. He confirms the contention of J. E. Crane that it yields honey best on sandy soils. Perhaps this may account for the failure of the plant to yield in the Middle West. Maybe the soil has more to do with it than the climate, although both may have an influence. A Michigan correspondent reports it yielding there on sandy soils also. Further reports will be of interest.

Mr. Lesser says that he has been fooled again and again by expecting a good yield from buckwheat on heavy soils. Many other beekeepers have also been fooled by expecting a heavy honey crop which never came because the plants on which they depended were on the wrong kind of soil to secure maximum conditions.

Mr. P. L. Vautier, P. O. Box 26, Gisborne, New Zealand, would like to correspond with beekeepers in this and other countries. An occasional letter from a far country adds much to the interest of life and it is probable that Mr. Vautier will find several new correspondents.

M. N. Dietrick, of Newton Falls, Ohio, also confirms the reports of bees working well on buckwheat on sandy soils and adds an interesting note about his bees working on watermelons. While the bees work freely on watermelon it is seldom that we have a report of surplus honey gathered from this source. If anyone has observed a good crop of honey from watermelons we would like to know something about the color and flavor of the product.

It is to be hoped that the question of amount of nectar secreted by the strawberry will receive further attention by careful observers. It is evident that in some localities the supply is scant and the plant is little visited by honeybees. Since cross pollination is essential with so many varieties it becomes highly important to the berry grower to understand this matter more fully.

At last we have secured a small amount of seed of the blue flowered sweet clover from France. A few seeds will be sent to correspondents who are enough interested to care for them in the garden and report results to us. Perhaps it may prove to be another desirable honey plant.

FRANK C. PELLETT.